

Geology  
GJBX-(78)-108

GJBX 108-(78)

# NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY

COOK INLET ALASKA AREA

TYONEK  
ANCHORAGE

KENAI  
SEWARD

SELDOVIA  
BLYING SOUND

QUADRANGLES

VOLUME II

LKB RESOURCES, INC.  
55 BUCK ROAD  
HUNTINGDON VALLEY, PENNSYLVANIA 19006

JULY, 1978

WORK PERFORMED UNDER  
BENDIX FIELD ENGINEERING CORPORATION GRAND JUNCTION OPERATIONS  
SUBCONTRACT NO. 76-015-S AND BENDIX CONTRACT EY-76-C-13-1664

PREPARED FOR THE  
DEPARTMENT OF ENERGY  
GRAND JUNCTION OFFICE  
GRAND JUNCTION, COLORADO 81501

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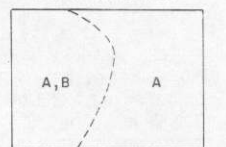
# TYONEK



LEGEND	
STRATIFIED SEDIMENTARY AND VOLCANIC ROCKS—MAINLY MARINE, IN PART METAMORPHOSED	
QUATERNARY	Qh HOLOCENE DEPOSITS
	Qp PLEISTOCENE DEPOSITS
JURASSIC CRETACEOUS	uMz CRETACEOUS AND JURASSIC ROCKS
	Sv SEDIMENTARY AND VOLCANIC ROCKS OF PALEOZOIC TO TERTIARY AGE IN THE ALASKAN AND ALEUTIAN MOUNTAIN RANGES. (GENERALLY EQUIVALENT TO uMz).
	mJ MIDDLE JURASSIC ROCKS
CONTINENTAL DEPOSITS	
TERTIARY	uTc UPPER TERTIARY CONTINENTAL DEPOSITS
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VOLCANIC ROCKS MAINLY SUBAERIAL	
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PLUTONIC AND HYPABYSSAL ROCKS—FELSIC COMPOSITION	
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METAMORPHIC ROCKS	
LOWER MESOZOIC	IMzm LOWER MESOZOIC METAMORPHIC ROCKS
CONTACT, DASHED WHERE INFERRED OR CONCEALED.	
FAULT, DASHED WHERE INFERRED OR CONCEALED.	
39, X48, 171, 145—METALLIC MINERAL OCCURRENCE IDENTIFIED IN REPORT.	
SOURCE PUBLICATION MF-385 MAP SERIES MR 32 TO 69	
ICE—ice, WATER	

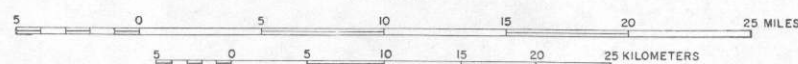
BASE MAP SOURCE: PUBLISHED N.T.M.S. 1:250,000

GEOLOGIC SOURCE INDEX



USGS PUB. A. (MF-612) 1:1,000,000  
B. (MF-372) 1:1,000,000

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY

TYONEK, ALASKA  
GEOLOGIC BASE MAP  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

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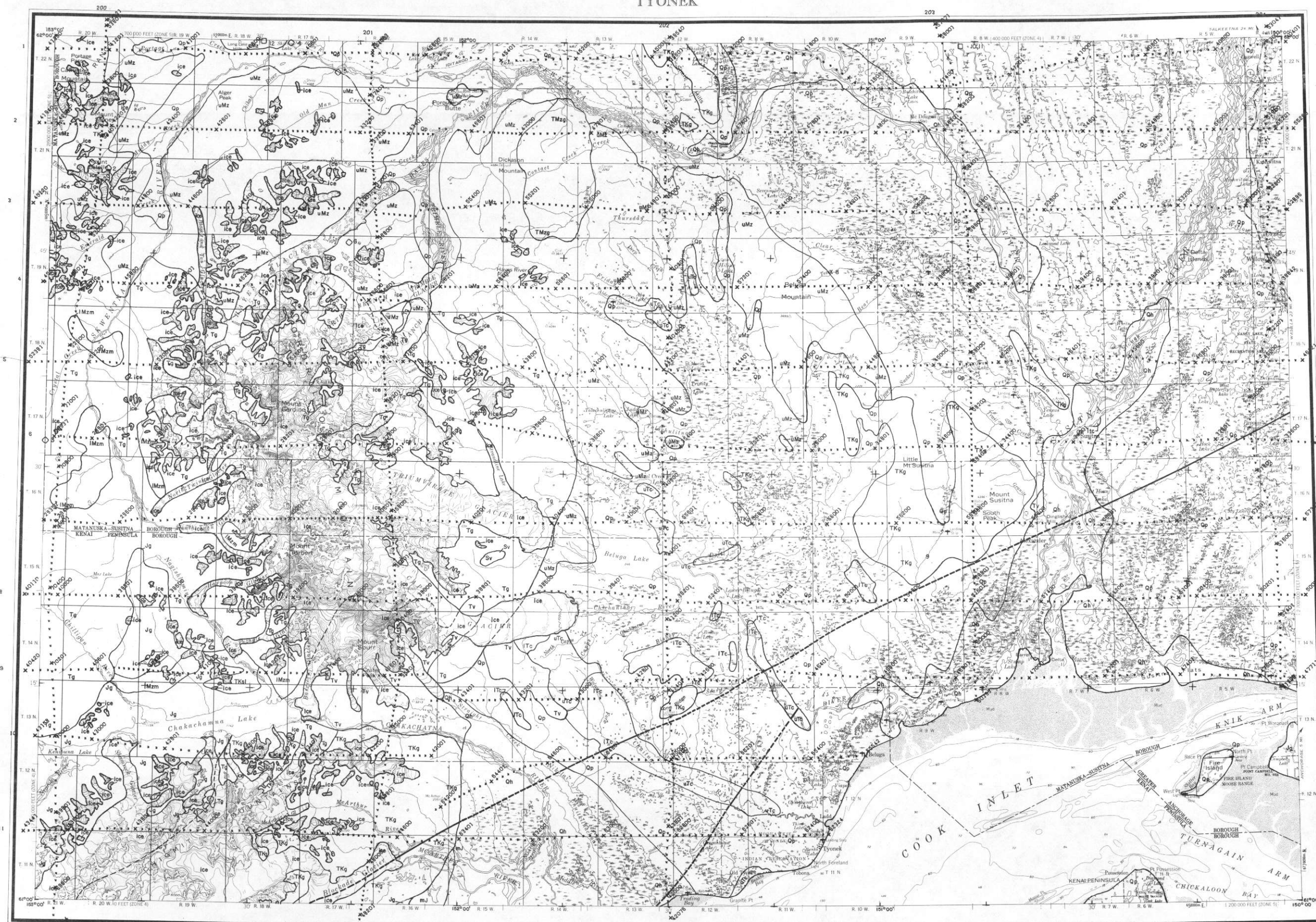
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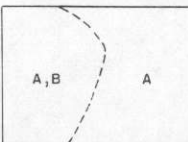
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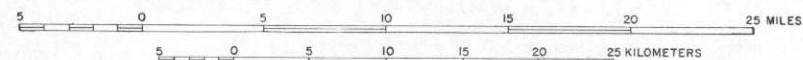
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NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEYTYONEK, ALASKA  
FLIGHT PATH MAP

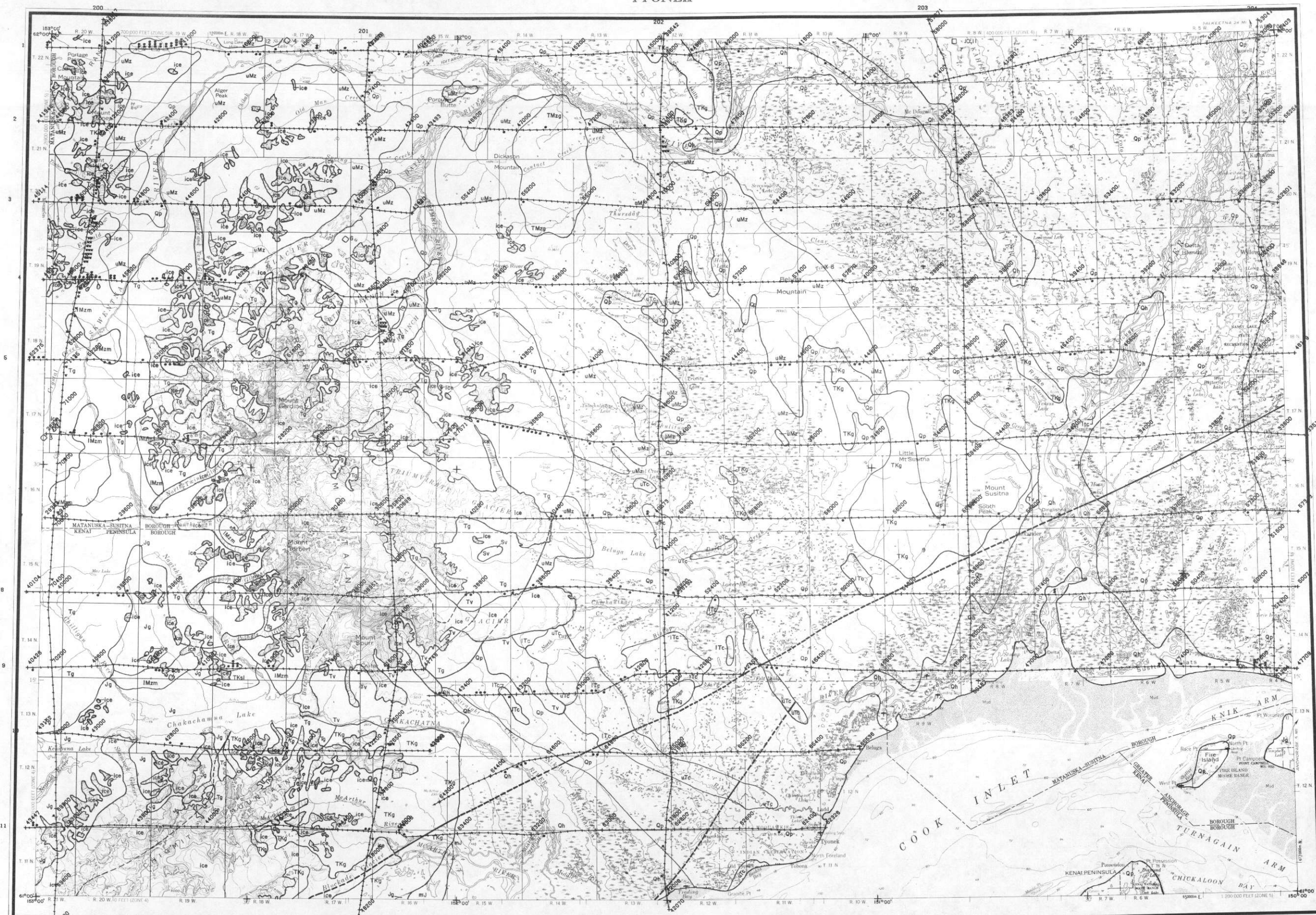
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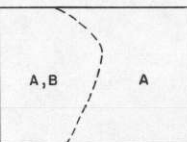
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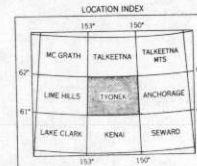
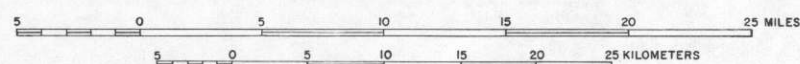
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NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY

TYONEK, ALASKA  
ANOMALY MAP—URANIUM  
1976-1978

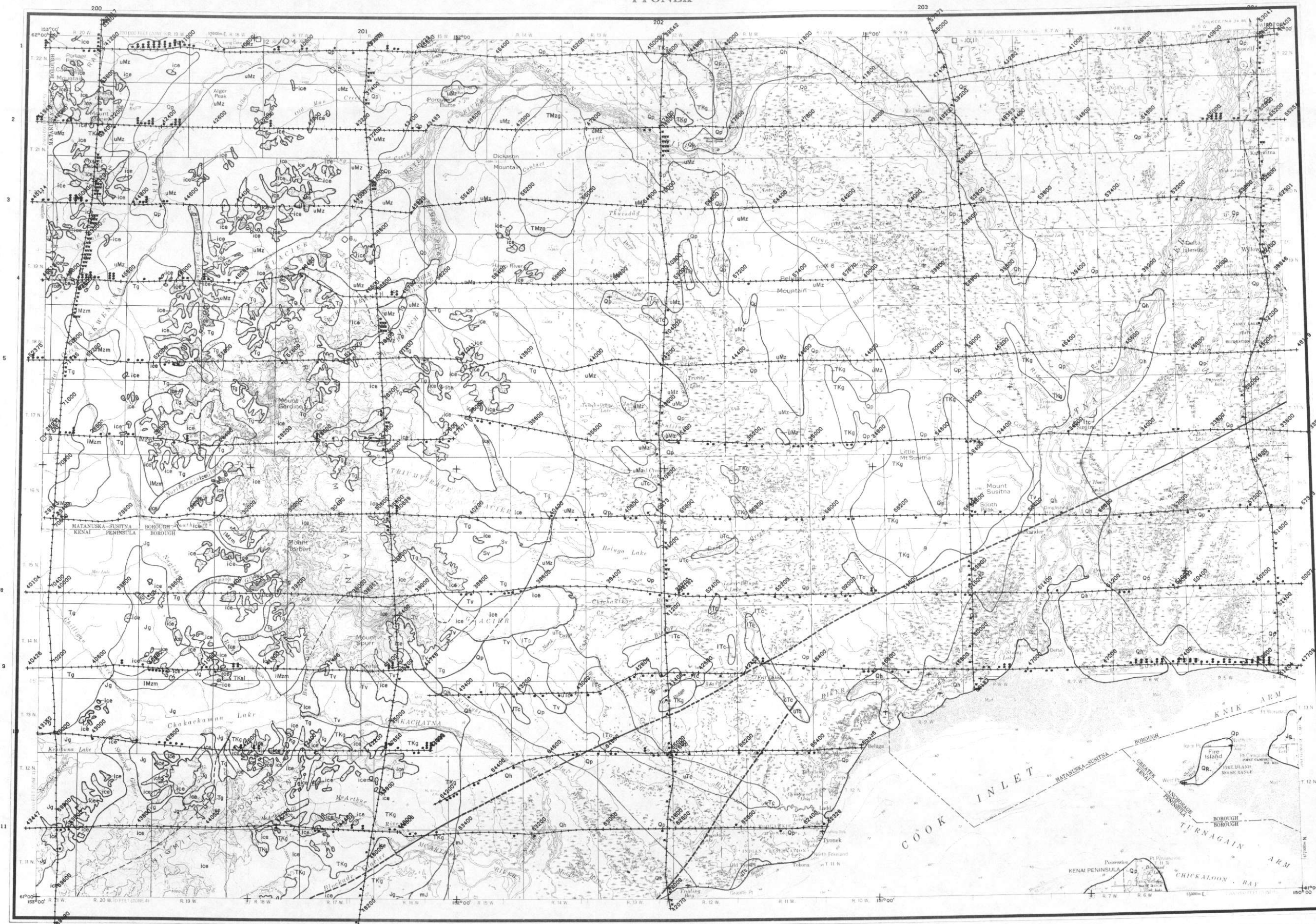
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PREPARED FOR  
DEPARTMENT OF ENERGY

EXPLANATION  
INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES.  
AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN  $\pm 1$  STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.  
TRAVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.



# TYONEK



## LEGEND

STRATIFIED SEDIMENTARY AND VOLCANIC ROCKS—MAINLY MARINE, IN PART METAMORPHOSED

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 ICE—ice; WATER—

BASE MAP SOURCE: PUBLISHED N.T.M.S. 1:250,000

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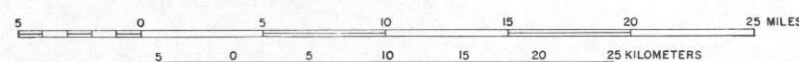
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## NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY

### TYONEK, ALASKA ANOMALY MAP—THORIUM 1976-1978

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# TYONEK

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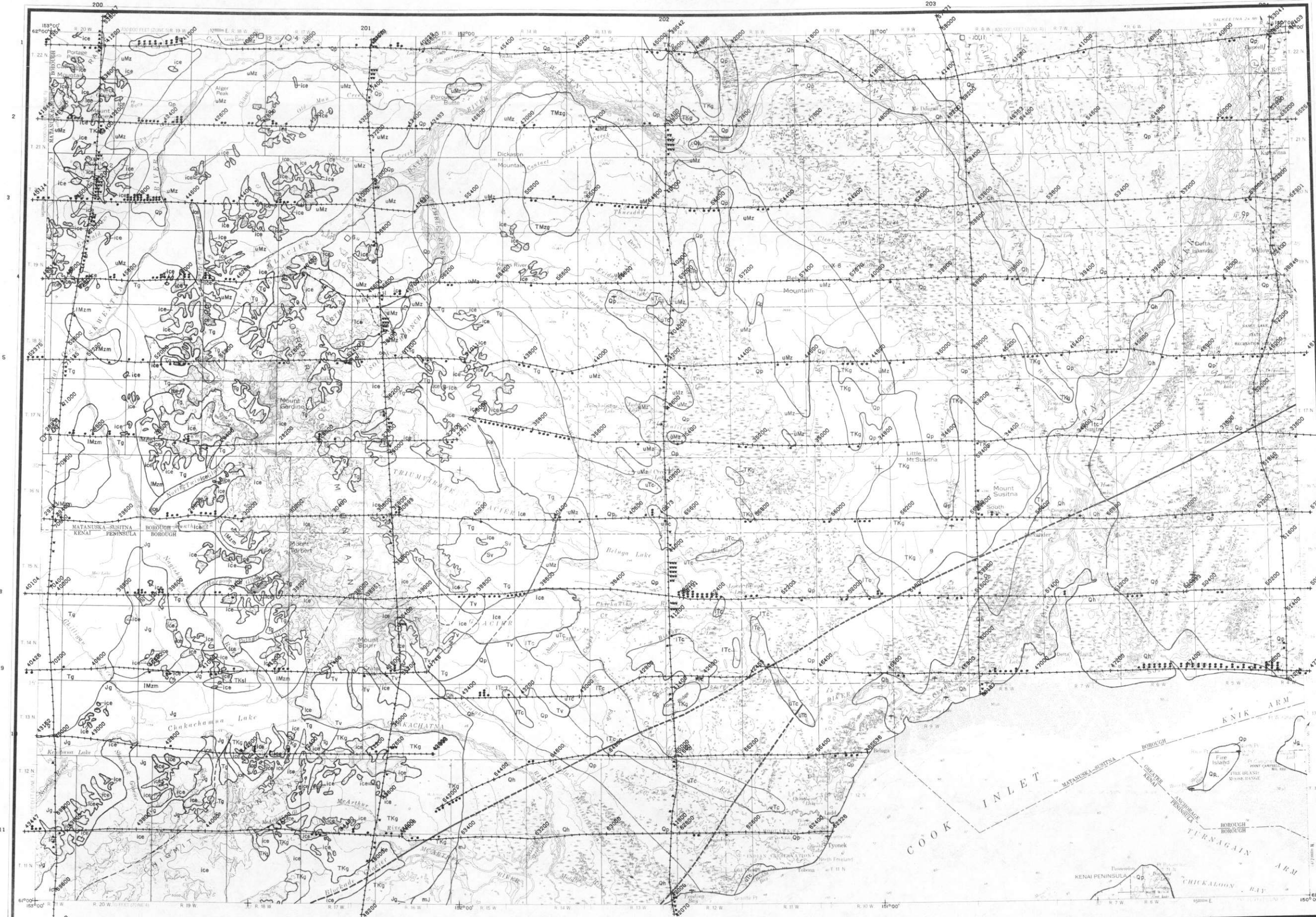
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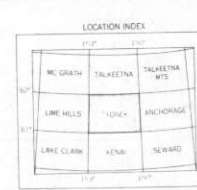
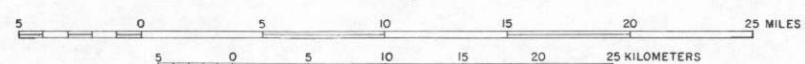
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BASE MAP SOURCE: PUBLISHED N.T.M.S. 1:250,000

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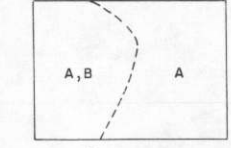


**EXPLANATION**

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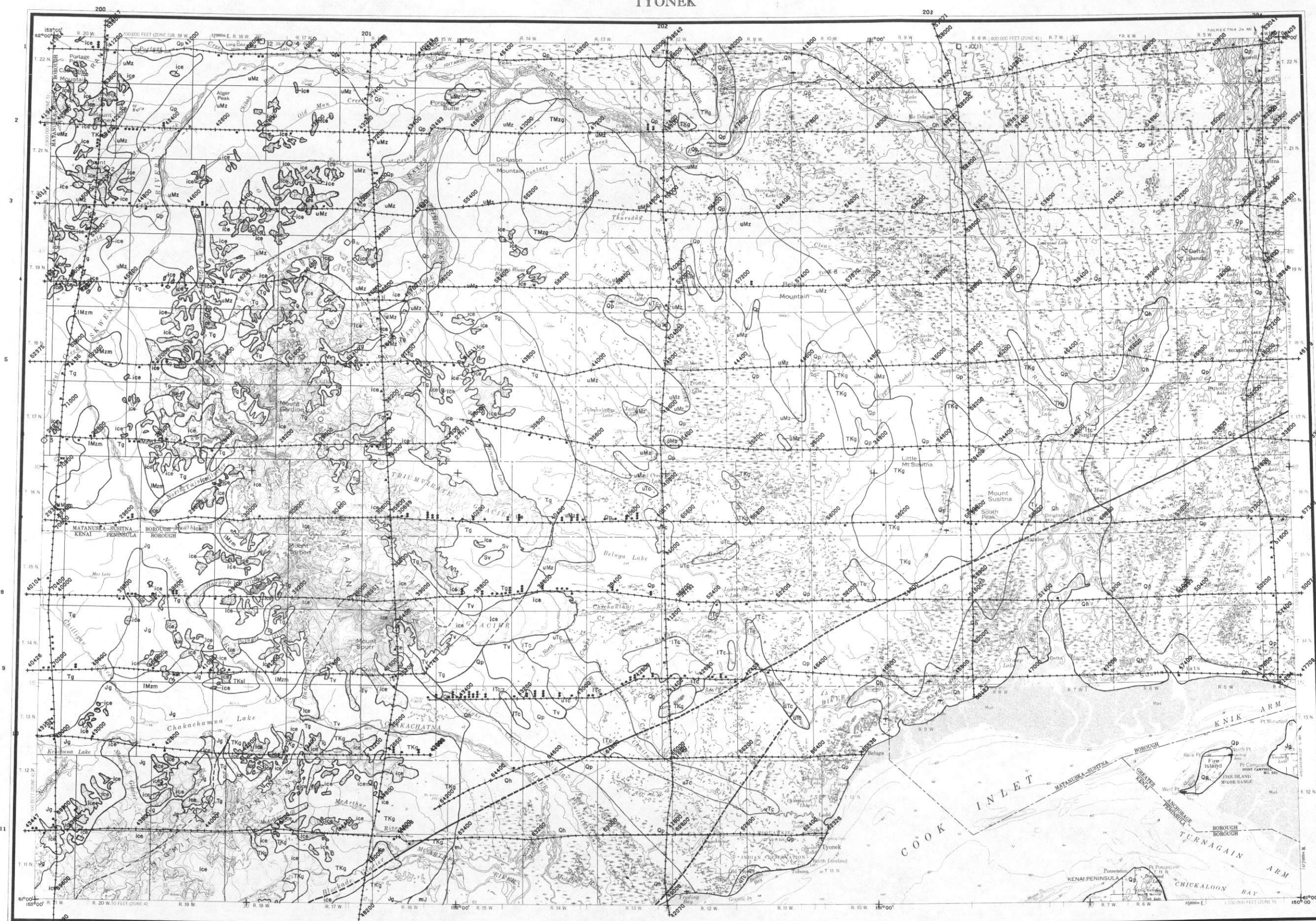
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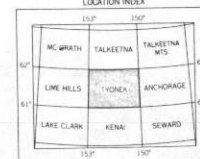
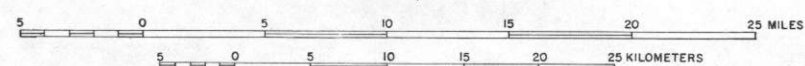
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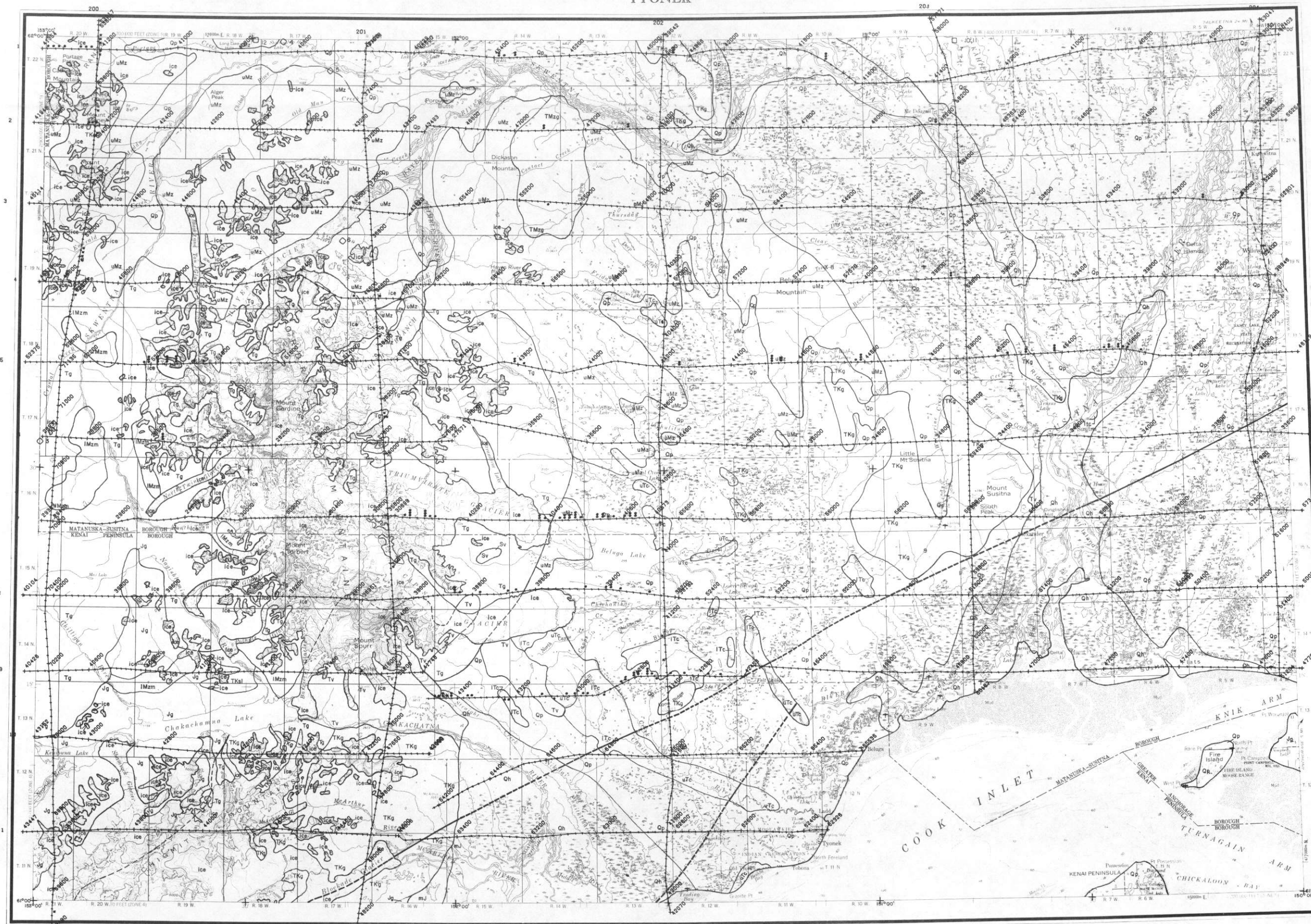
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GEOLOGIC SOURCE INDEX

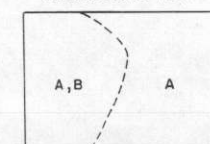
SCALE 1:500,000

## EXPLANATION

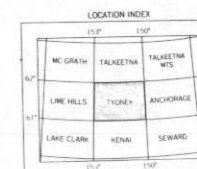
INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES.

AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN  $\pm 1$  STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.

TRAVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.



USGS PUB. A. (MF-612) 1:1,000,000  
B. (MF-372) 1:1,000,000

NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEYTYONEK, ALASKA  
ANOMALY MAP—URANIUM/POTASSIUM  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



# TYONEK

## LEGEND

STRATIFIED SEDIMENTARY AND VOLCANIC ROCKS—MAINLY MARINE,  
IN PART METAMORPHOSED

QUATERNARY  
[Qh] HOLOCENE DEPOSITS  
[Qp] PLEISTOCENE DEPOSITS

JURASSIC  
[uMz] CRETACEOUS AND JURASSIC ROCKS  
[Sv] SEDIMENTARY AND VOLCANIC ROCKS OF PALEOZOIC TO TERTIARY AGE IN THE ALASKAN AND ALEUTIAN MOUNTAIN RANGES (GENERALLY EQUIVALENT TO uMz).  
[mJ] MIDDLE JURASSIC ROCKS

CONTINENTAL DEPOSITS

TERTIARY  
[uTc] UPPER TERTIARY CONTINENTAL DEPOSITS  
[lTc] LOWER TERTIARY CONTINENTAL DEPOSITS

VOLCANIC ROCKS MAINLY SUBAERIAL

TERTIARY  
[Tv] TERTIARY VOLCANIC ROCKS

PLUTONIC AND HYPABYSSAL ROCKS—FELSIC COMPOSITION

TERTIARY  
[Tg] TERTIARY GRANITIC ROCKS  
[TKg] TERTIARY AND CRETACEOUS GRANITIC ROCKS  
[TMzg] TERTIARY AND (OR) MESOZOIC GRANITIC ROCKS

UPPER CRETACEOUS AND (OR) LOWER TERTIARY  
[TKme] GRANODIORITE OF MOUNT ESTELLE (GENERALLY EQUIVALENT TO Tg, MAPPED IN N.W. TYONEK ONLY).  
[TKsl] ROCKS OF SUMMIT LAKE (QUARTZ DIORITE AND GRANODIORITE)

JURASSIC  
[Jg] JURASSIC GRANITIC ROCKS

METAMORPHIC ROCKS

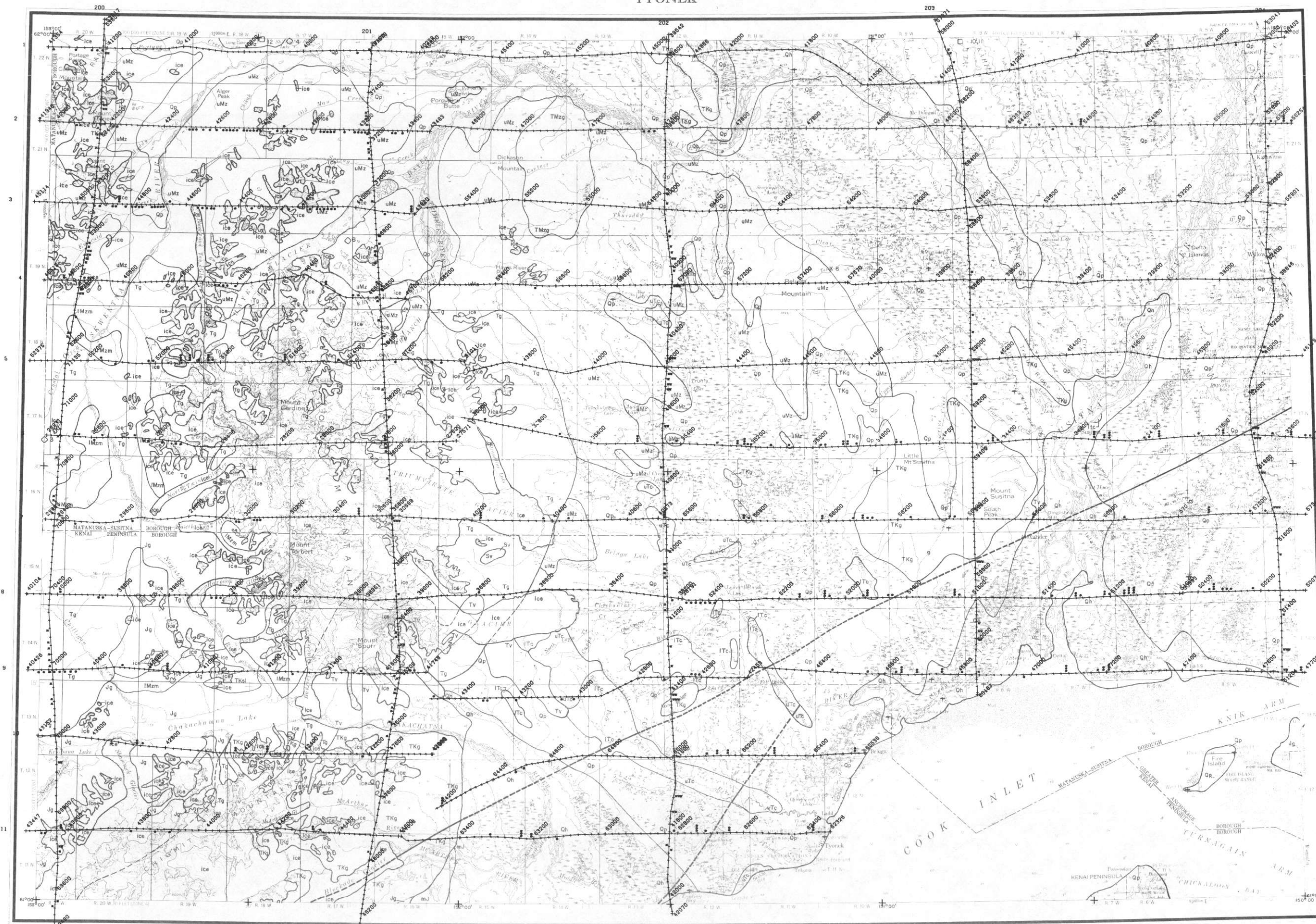
LOWER MESOZOIC  
[IMzm] LOWER MESOZOIC METAMORPHIC ROCKS

--- CONTACT, DASHED WHERE INFERRED OR CONCEALED.  
--- FAULT, DASHED WHERE INFERRED OR CONCEALED.

◇ 39, X48, □ 171, 145—METALLIC MINERAL OCCURRENCE IDENTIFIED IN REPORT.

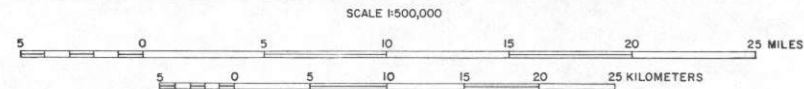
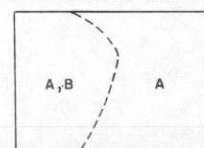
SOURCE PUBLICATION MF-385, MAP SERIES MR 32 TO 69

ICE—[ice]; WATER—[water]



BASE MAP SOURCE: PUBLISHED N.T.M.S. 1:250,000

GEOLOGIC SOURCE INDEX



**EXPLANATION**  
INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES  
AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN  $\pm 1$  STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.  
TRAVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.

USGS PUB. [A (MF-612) 1:1,000,000  
B (MF-372) 1:1,000,000]

NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
ANOMALY MAP—THORIUM/POTASSIUM  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



TL/K  
0.20/DIV

BI/TL  
0.20/DIV

BI/K  
0.20/DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

BI  
5 C/S/DIV

BI COR  
5.00/DIV

TC  
300 C/S/DIV

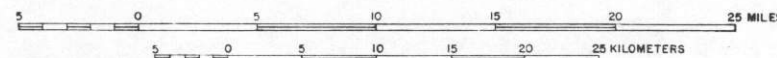
ALT  
150 FT/DIV

MAG  
150 GAUSS/DIV

P 1

▲ FLAGGED SAMPLE VALUES OF  
K, U, T INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES

1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



TL/K  
0.20/DIV

BI/TL  
0.20/DIV

BI/K  
0.20/DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

BI  
5 C/S/DIV

BI COR  
5.00/DIV

TC  
300 C/S/DIV

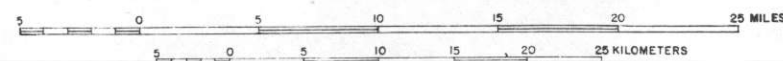
ALT  
150 FT/DIV

MAG  
150 GAUSS/DIV

P 2

↑ FLAGGED SAMPLE VALUES OF  
K,U,T INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY
TYONEK, ALASKA
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES 1976-1978
BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006
PREPARED FOR DEPARTMENT OF ENERGY



TL/K  
0.20 DIV

BI/TL  
0.20 DIV

BI/K  
0.20 DIV

K  
50 C/B/DIV

TL  
5 C/B/DIV

BI  
5 C/B/DIV

BI COR  
5.00 DIV

TC  
300 C/B/DIV

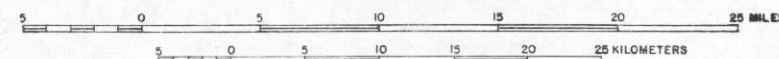
ALT  
150 FT/DIV

MAG  
150 GAUSS/DIV

P 3

FLAGGED SAMPLE VALUES OF  
K, U, T INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES

1976-1978

BY LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



TL/K  
0.20/DIV

BI/TL  
0.20/DIV

BI/K  
0.20/DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

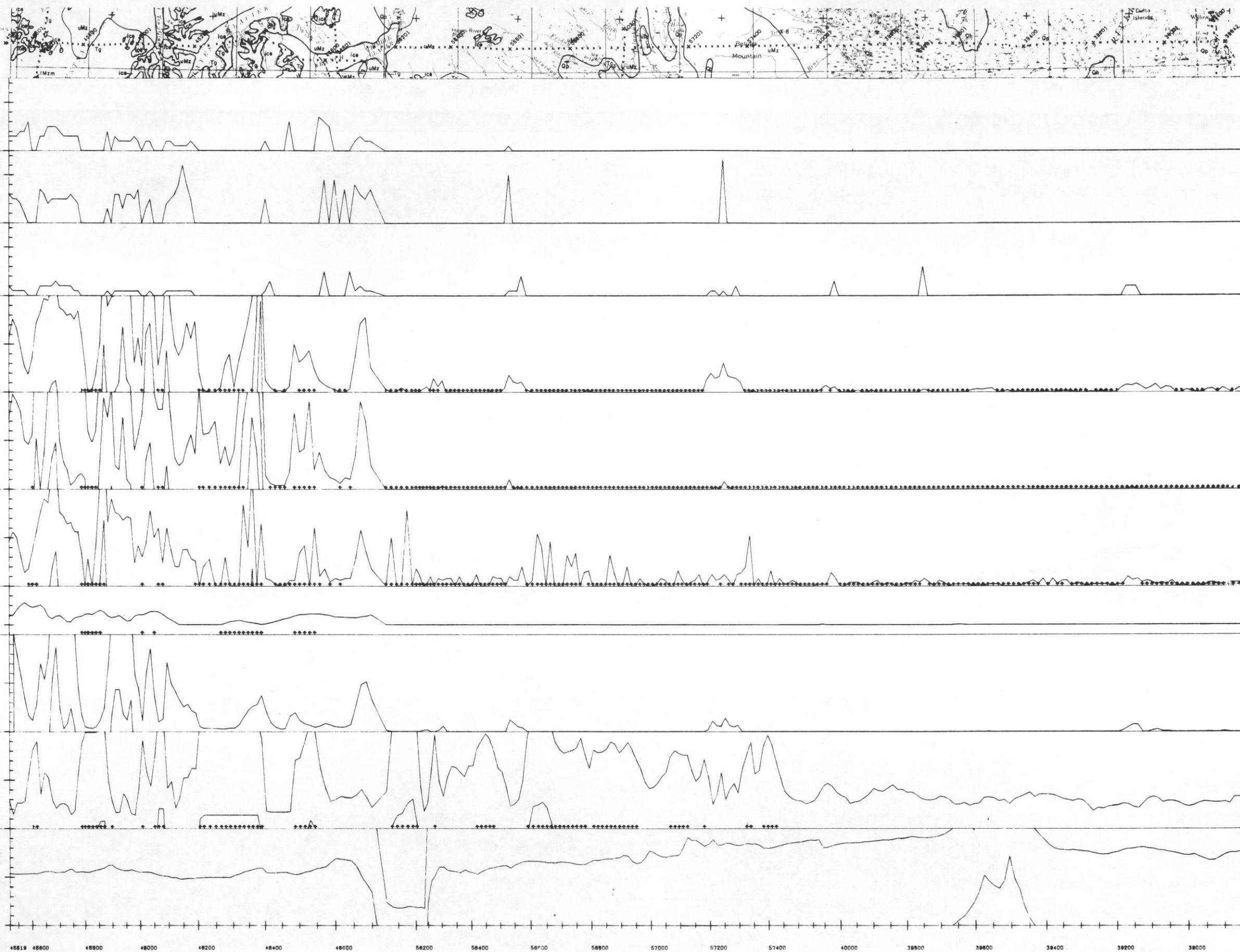
BI  
5 C/S/DIV

BI COR  
5.00/DIV

TC  
300 C/S/DIV

ALT  
180 FT/DIV

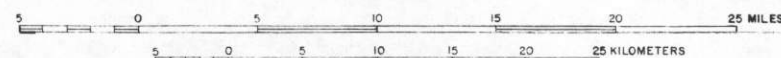
MAG  
150 GAMMAS/DIV



P 4

↑ FLAGGED SAMPLE VALUES OF  
K, U, T INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



TL/K  
0.20/DIV

BI/TL  
0.20/DIV

BI/K  
0.20/DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

BI  
5 C/S/DIV

BI COR  
5.00/DIV

TC  
300 C/S/DIV

ALT  
150 FT/DIV

MAG  
150 GAMMAS/DIV

P 5

↑ FLAGGED SAMPLE VALUES OF  
K, TL, BI INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000

0 5 10 15 20 25 MILES  
0 5 10 15 20 25 KILOMETERS

NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES

1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



TL/K  
0.20/div

BI/TL  
0.20/div

BI/K  
0.20/div

K  
20 C/S/div

TL  
5 C/S/div

BI  
5 C/S/div

BI COR  
5.00/div

TC  
300 C/S/div

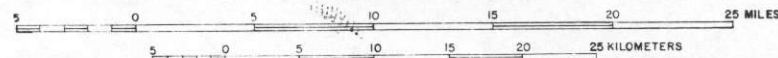
ALT  
150 FT/div

MAG  
150 GAMMAS/div

P 6

↑ FLAGGED SAMPLE VALUES OF  
MUT INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



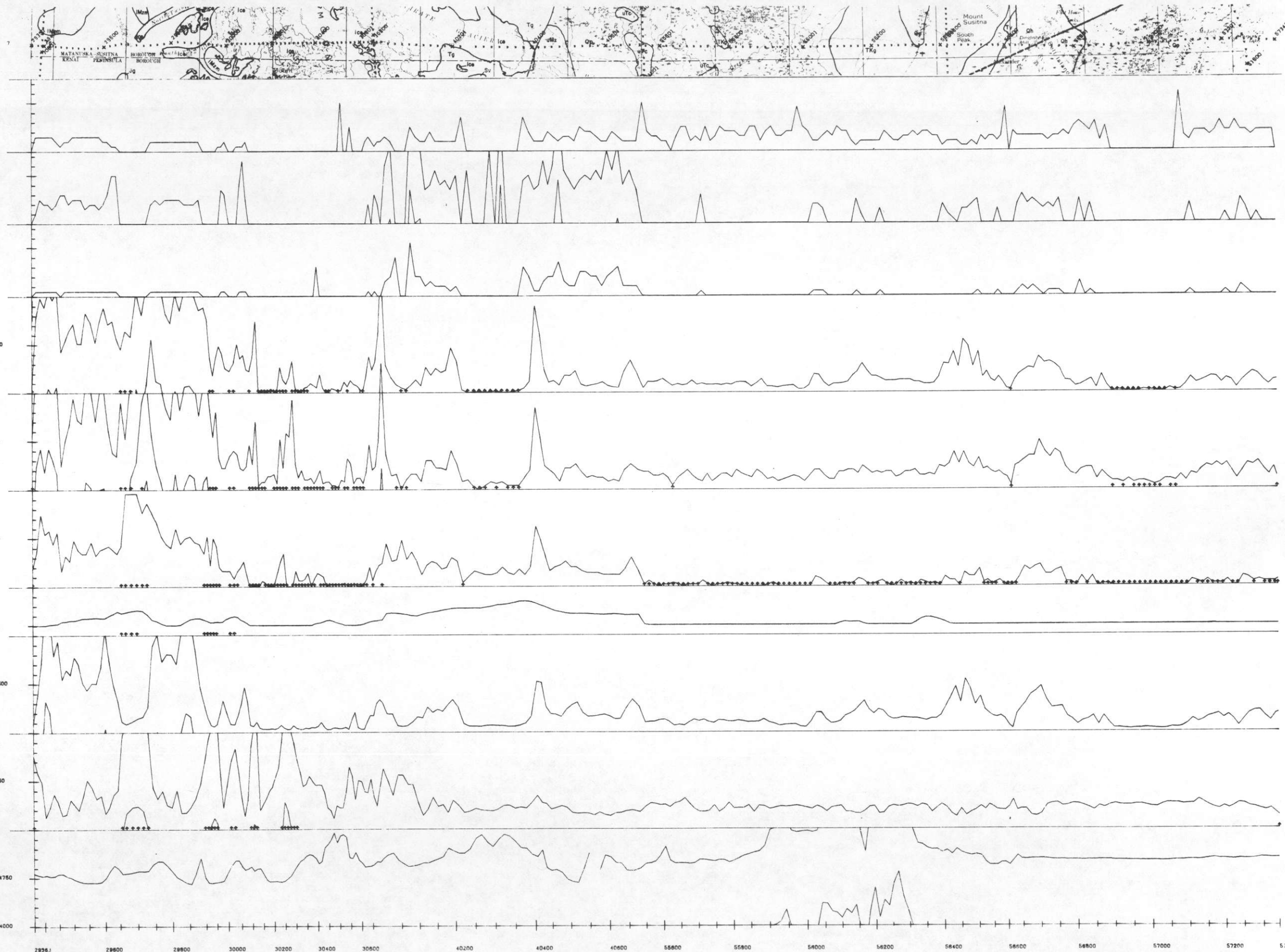
NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

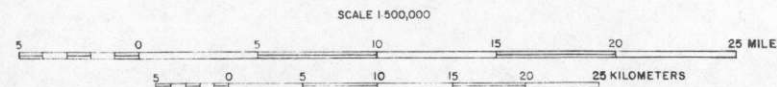
PREPARED FOR  
DEPARTMENT OF ENERGY





P 7

↑ FLAGGED SAMPLE VALUES OF  
N.H.T. INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY	
TYONEK, ALASKA	
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES 1976-1978	
BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006	
PREPARED FOR DEPARTMENT OF ENERGY	



TL/K  
0.20/dIV

BI/TL  
0.20/dIV

BI/K  
0.20/dIV

K  
20 C/S/dIV

TL  
5 C/S/dIV

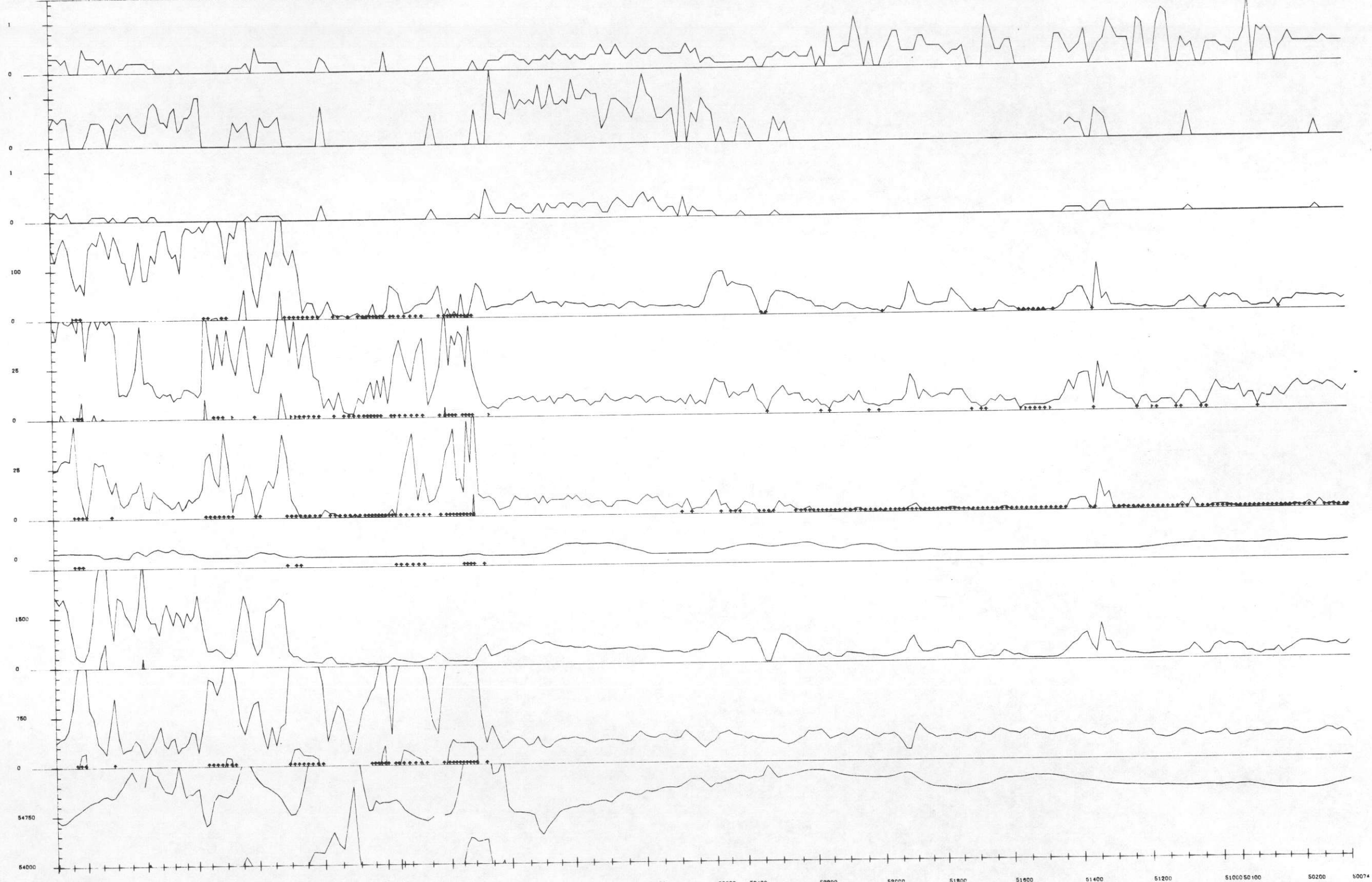
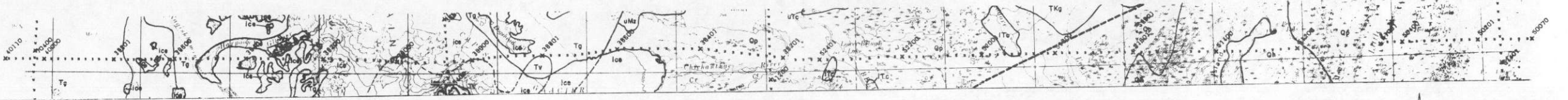
BI  
5 C/S/dIV

BI COR  
5.00/dIV

TC  
300 L/S/dIV

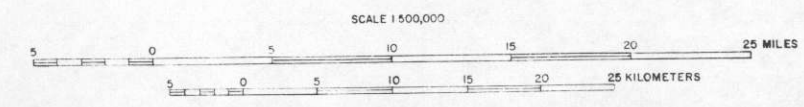
ALT  
150 FT/dIV

MAG  
150 GAMMAS/dIV



P 8

\* FLAGGED SAMPLE VALUES OF  
K, T, INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY	
TYONEK, ALASKA	
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES 1976-1978	
BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006	
PREPARED FOR DEPARTMENT OF ENERGY	



TL/K  
0.20/DIV

BI/TL  
0.20/DIV

BI/K  
0.20/DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

BI  
5 C/S/DIV

BI COR  
5.00/DIV

TC  
300 C/S/DIV

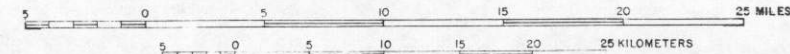
ALT  
150 FT/DIV

MAG  
150 GAMMAS/DIV

P 9

↑ FLAGGED SAMPLE VALUES OF  
K<sub>U</sub>, T INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY	
TYONEK, ALASKA	
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES 1976-1978	
BY: LKB RESOURCES, INC 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006	
PREPARED FOR DEPARTMENT OF ENERGY	



TL/K  
0.20 DIV

BI/TL  
0.20 DIV

BI/K  
0.20 DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

BI  
5 C/S/DIV

BI COR  
5.00 DIV

TC  
300 C/S/DIV

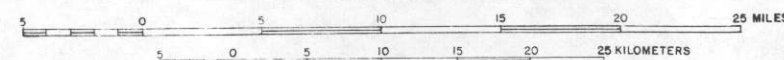
ALT  
150 FT/DIV

MAG  
150 CPMAS/DIV

P 10

↑ FLAGGED SAMPLE VALUES OF  
K, U, T INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

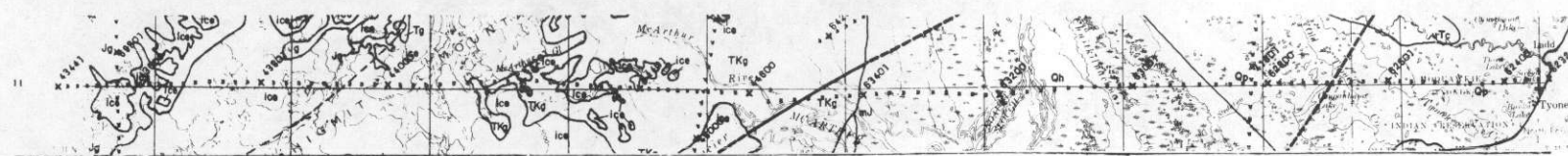
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES

1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY





COOK

TI / K  
0.20 DIV

BI / TL  
0.20 DIV

BI / K  
0.20 DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

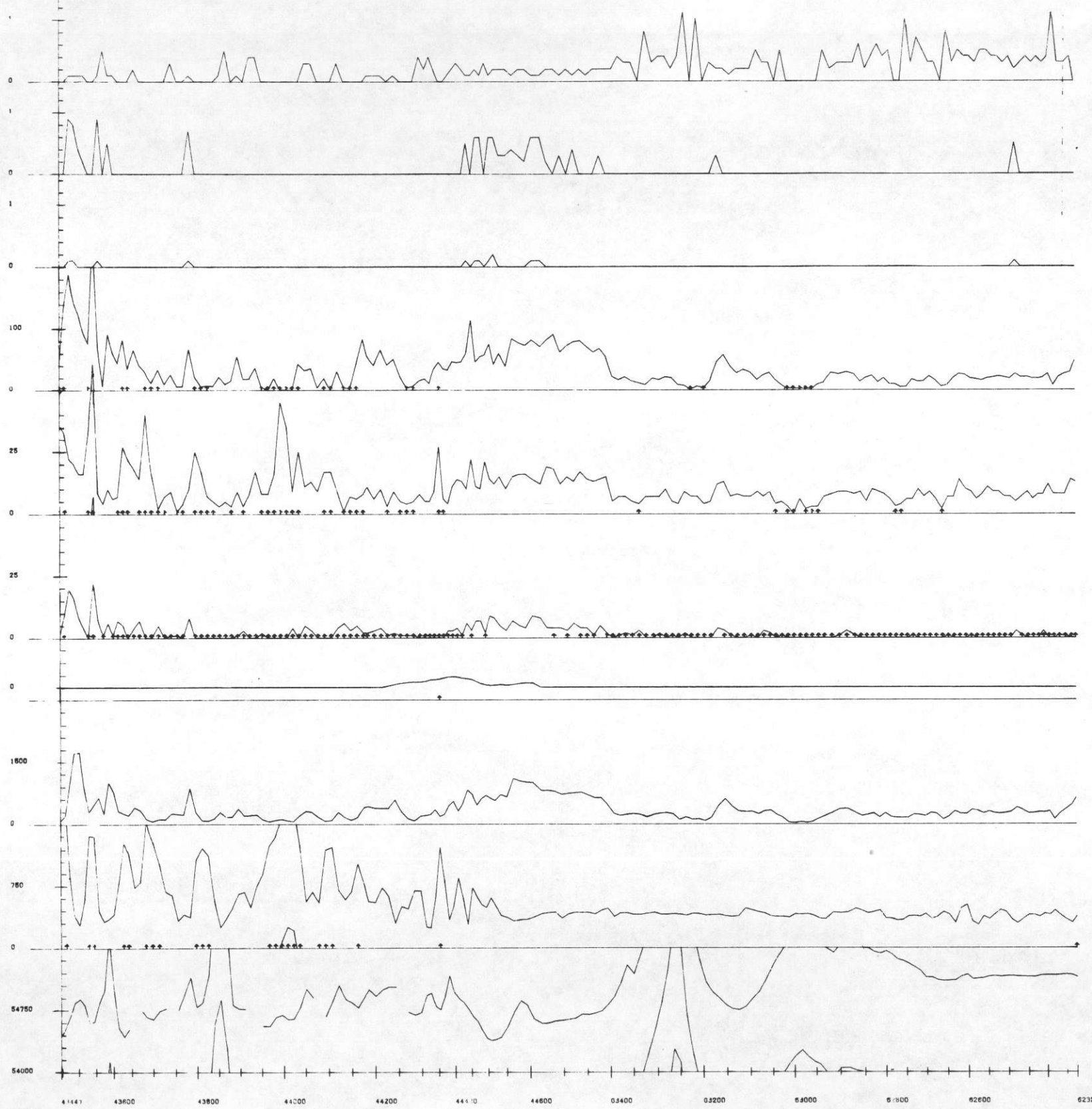
BI  
5 C/S/DIV

BI COR  
5.00 DIV

TC  
300 C/S/DIV

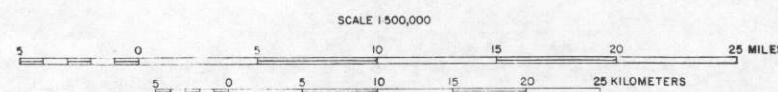
ALT  
150 FT/DIV

MAG  
150 CPM/PS/DIV



P 11

↑ FLAGGED SAMPLE VALUES OF  
K, TL INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY
TYONEK, ALASKA
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES
1976-1978
BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006
PREPARED FOR DEPARTMENT OF ENERGY



TL/K  
0.20/DIV

BI/TL  
0.20/DIV

BI/K  
0.20/DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

BI  
5 C/S/DIV

BI COR  
5.00/DIV

TC  
300 C/S/DIV

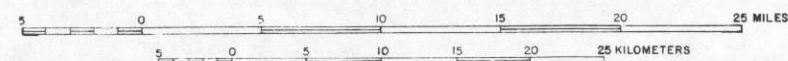
ALT  
150 FT/DIV

MAG  
150 GAMMAS/DIV

TL 200

↑ FLAGGED SAMPLE VALUES OF  
MULT INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



TL/K  
0.20/DIV

BI/TL  
0.20/DIV

BI/K  
0.20/DIV

K  
20 C/S/DIV

I'  
5 C/S/DIV

BI  
5 C/S/DIV

BI COR  
5.00/DIV

TL  
300 C/S/DIV

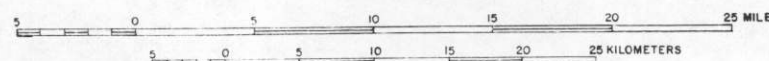
ALT  
150 FT/DIV

MAG  
150 GAMMAS/DIV

TL 201

\* FLAGGED SAMPLE VALUES OF  
\* U.T INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

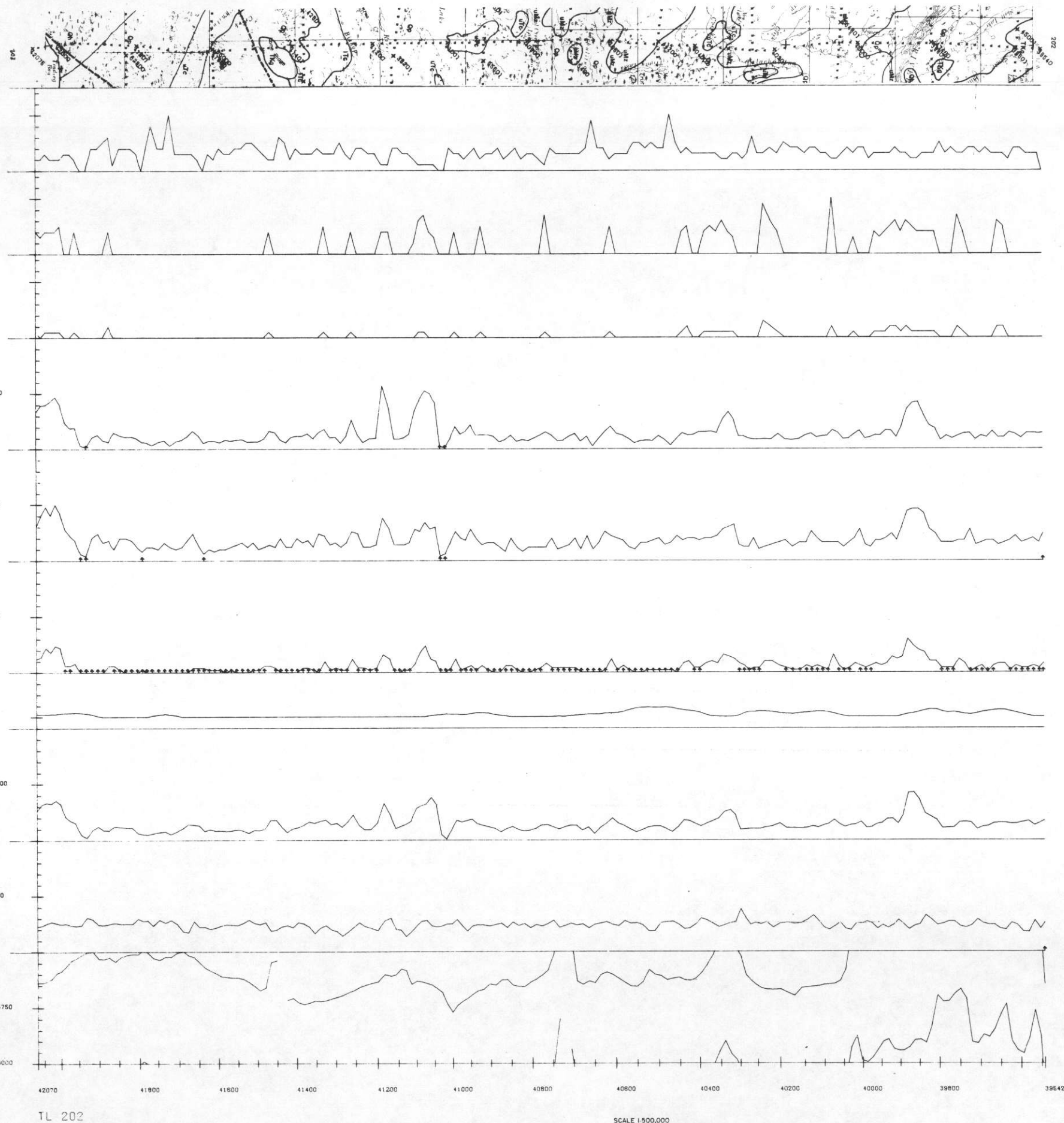
TYONEK, ALASKA

RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY





NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY
TYONEK, ALASKA
RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES
1976-1978
BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006
PREPARED FOR DEPARTMENT OF ENERGY



TL/K  
0.20/DIV

BI/TL  
0.20/DIV

BI/K  
0.20/DIV

K  
20 C/S/DIV

TL  
5 C/S/DIV

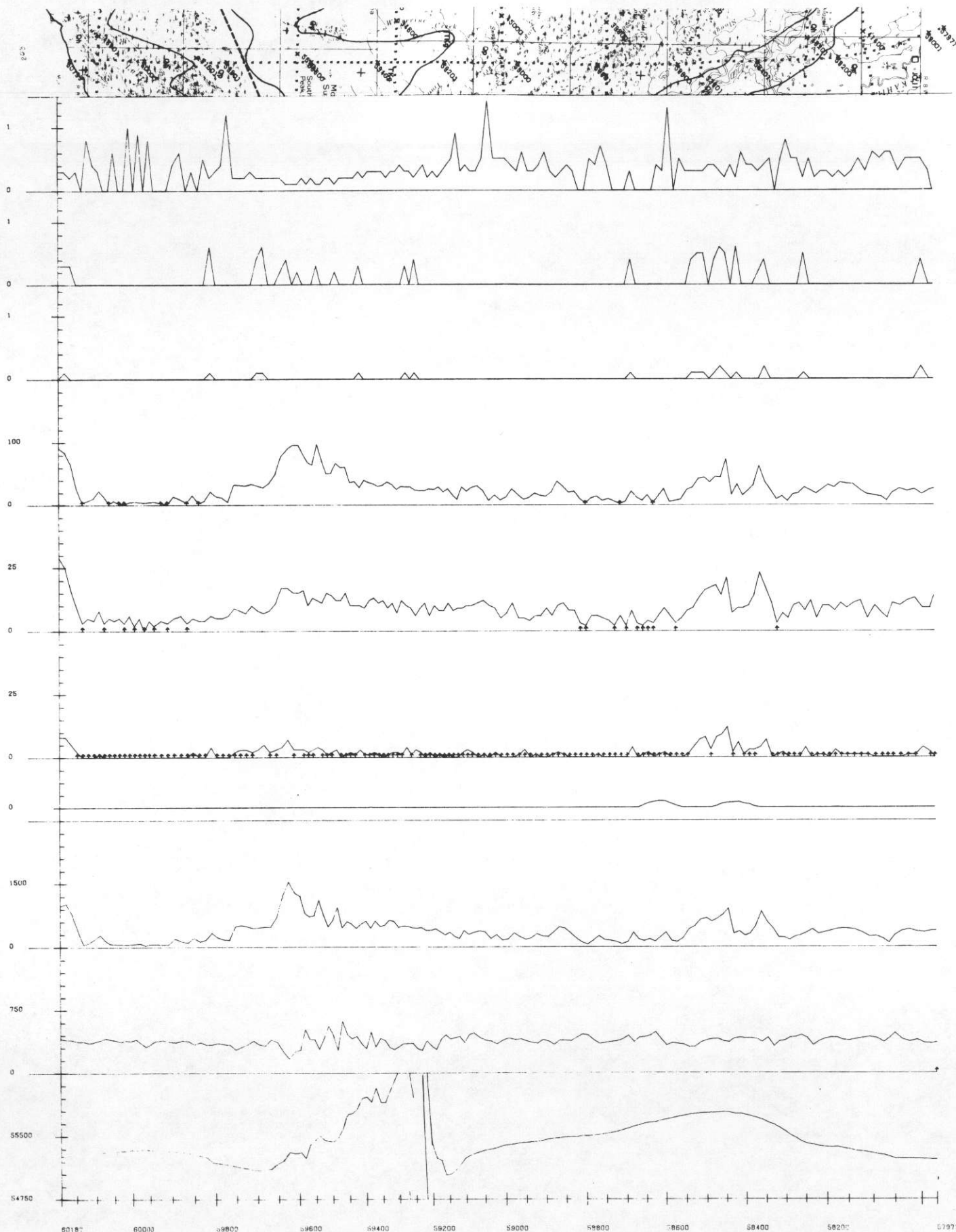
BI  
5 C/S/DIV

BI COR  
5.00/DIV

TC  
300 C/S/DIV

ALT  
150 FT/DIV

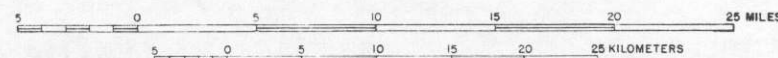
MAG  
150 GAMMA'S/DIV



TL 203

↑ FLAGGED SAMPLE VALUES OF  
K, U, T INDICATES DATA FAILED  
STATISTICAL ADEQUACY TEST

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES

1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



TL K  
0.20 DIV

BI/TL  
0.20 DIV

BI/K  
0.20 DIV

K  
20 C/S DIV

TL  
5 C/S DIV

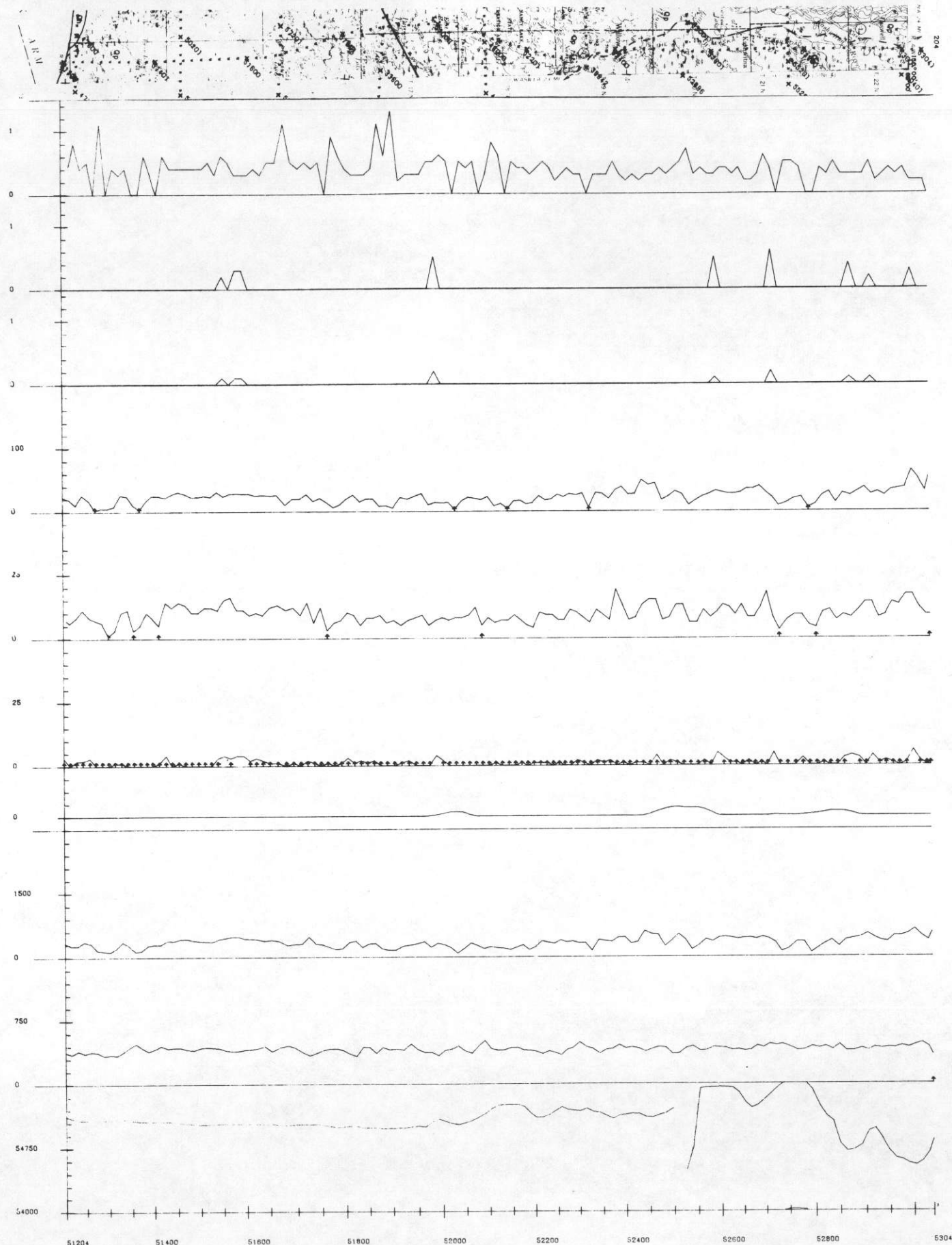
BI  
5 C/S DIV

BI COR  
5.00 DIV

TC  
300 C/S DIV

ALT  
150 FT/DIV

MAG  
150 GRAMS/DIV



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES

1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



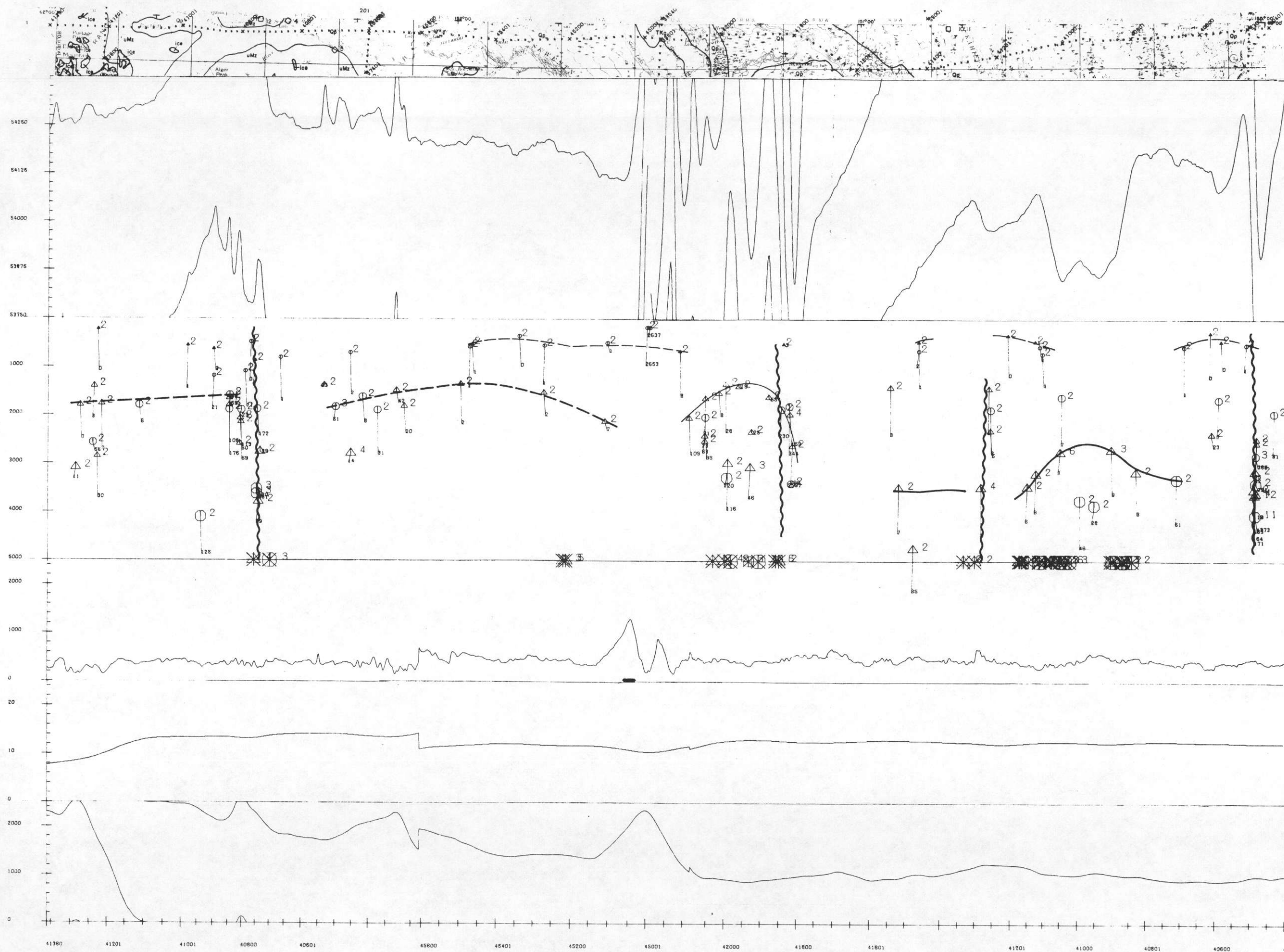
MAG  
25 GAMMAS/DIV

MAG SOURCE  
DEPTH  
1000 FT/DIV

ALT  
200 FT/DIV

TEMP  
2.00 DEGREES/DIV

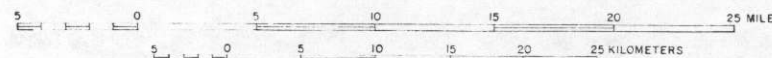
BAR ALT  
200 FT/DIV



P 1

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

MAGNETIC AND ANCILLARY STACKED PROFILE DATA

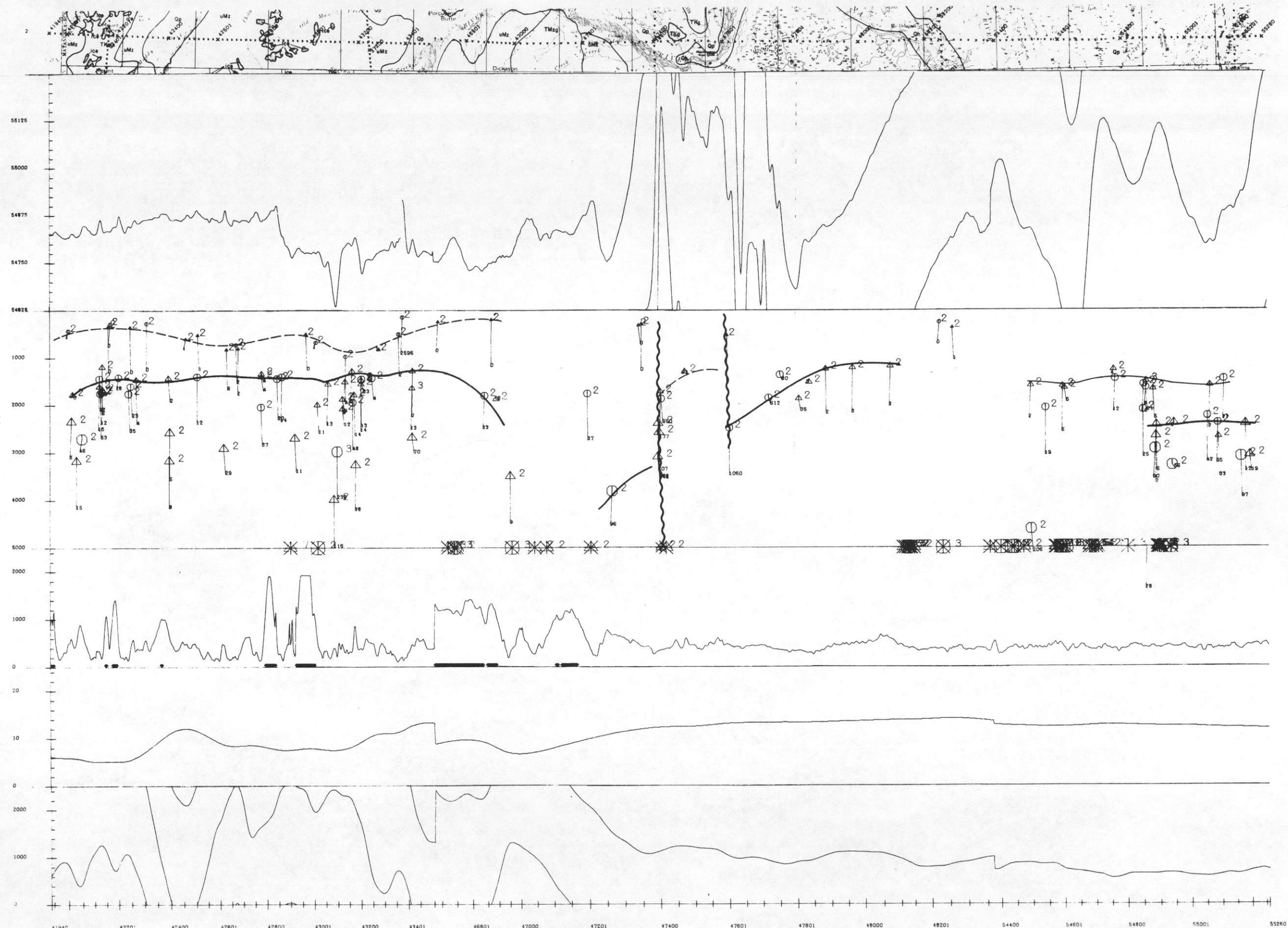
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



BAR ALT  
200 FT/DIV



P 2

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000

NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

MAGNETIC AND ANCILLARY STACKED PROFILE DATA

1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY







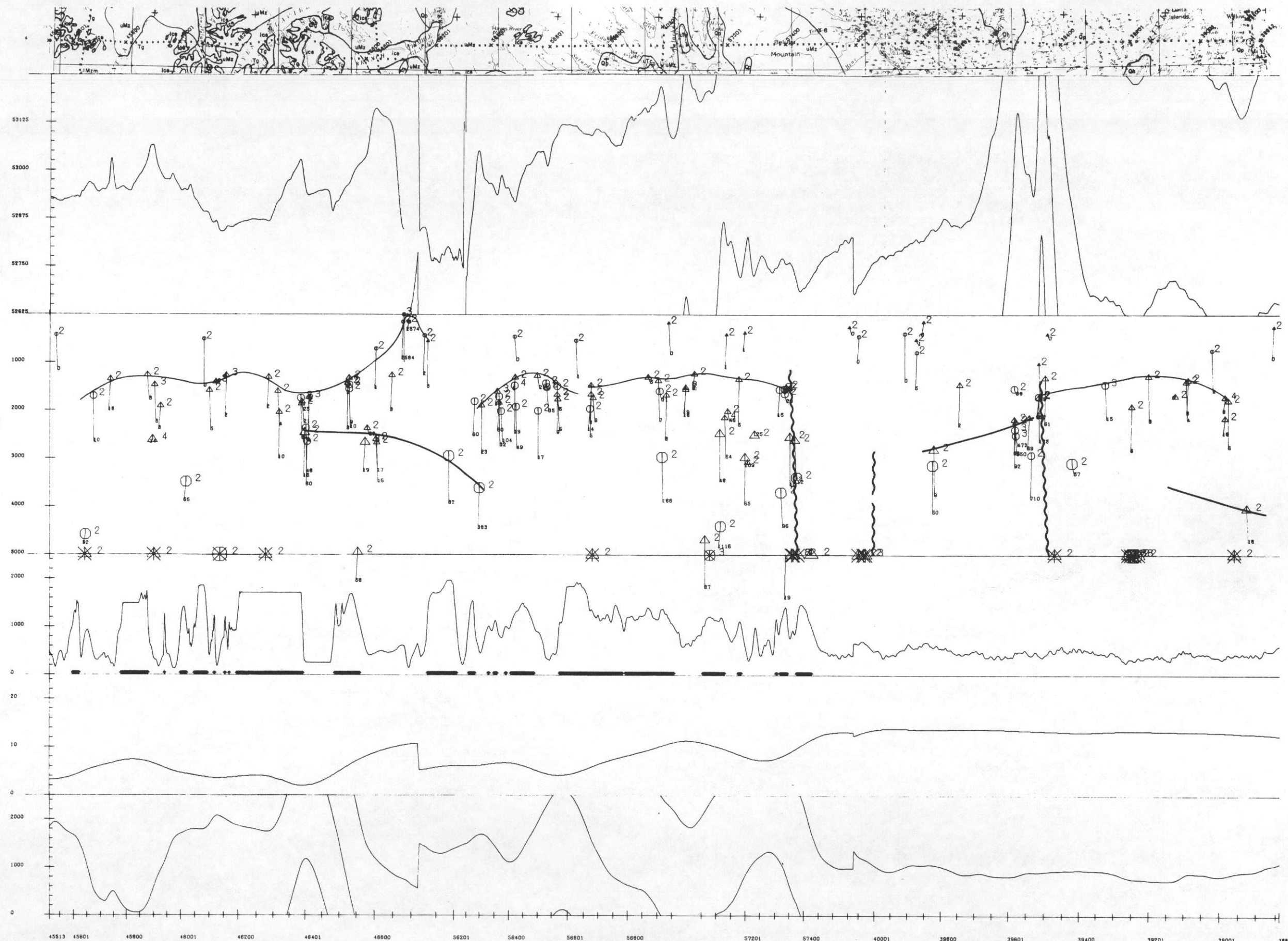
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MAG SOURCE  
DEPTH  
1000 FT/DIV

ALT  
200 FT/DIV

TEMP  
2.00 DEGREES/DIV

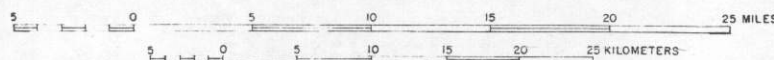
BAR ALT  
200 FT/DIV



P 4

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
MAGNETIC AND ANCILLARY STACKED PROFILE DATA  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



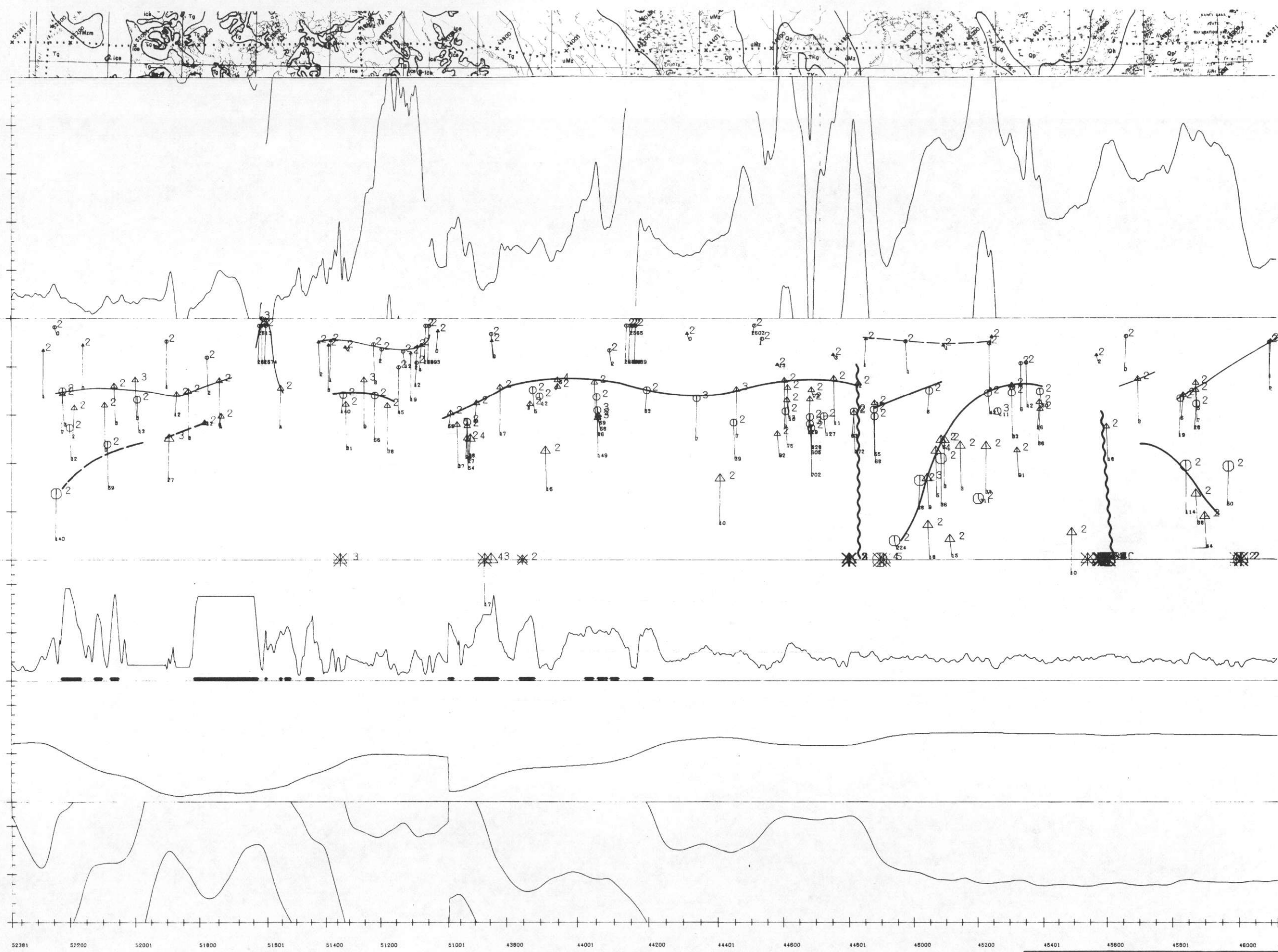
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MAG SOURCE  
DEPTH  
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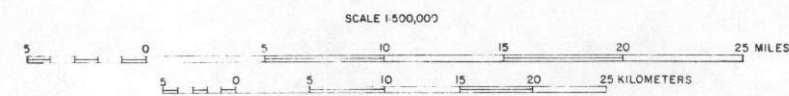
TEMP  
2.00 DEGREES/DIV

BAR ALT  
200 FT/DIV



P 5

↑ EXCEEDS ALTITUDE SPECIFICATIONS



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY
TYONEK, ALASKA
MAGNETIC AND ANCILLARY STACKED PROFILE DATA
1976-1978
BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006
DEPARTMENT OF ENERGY



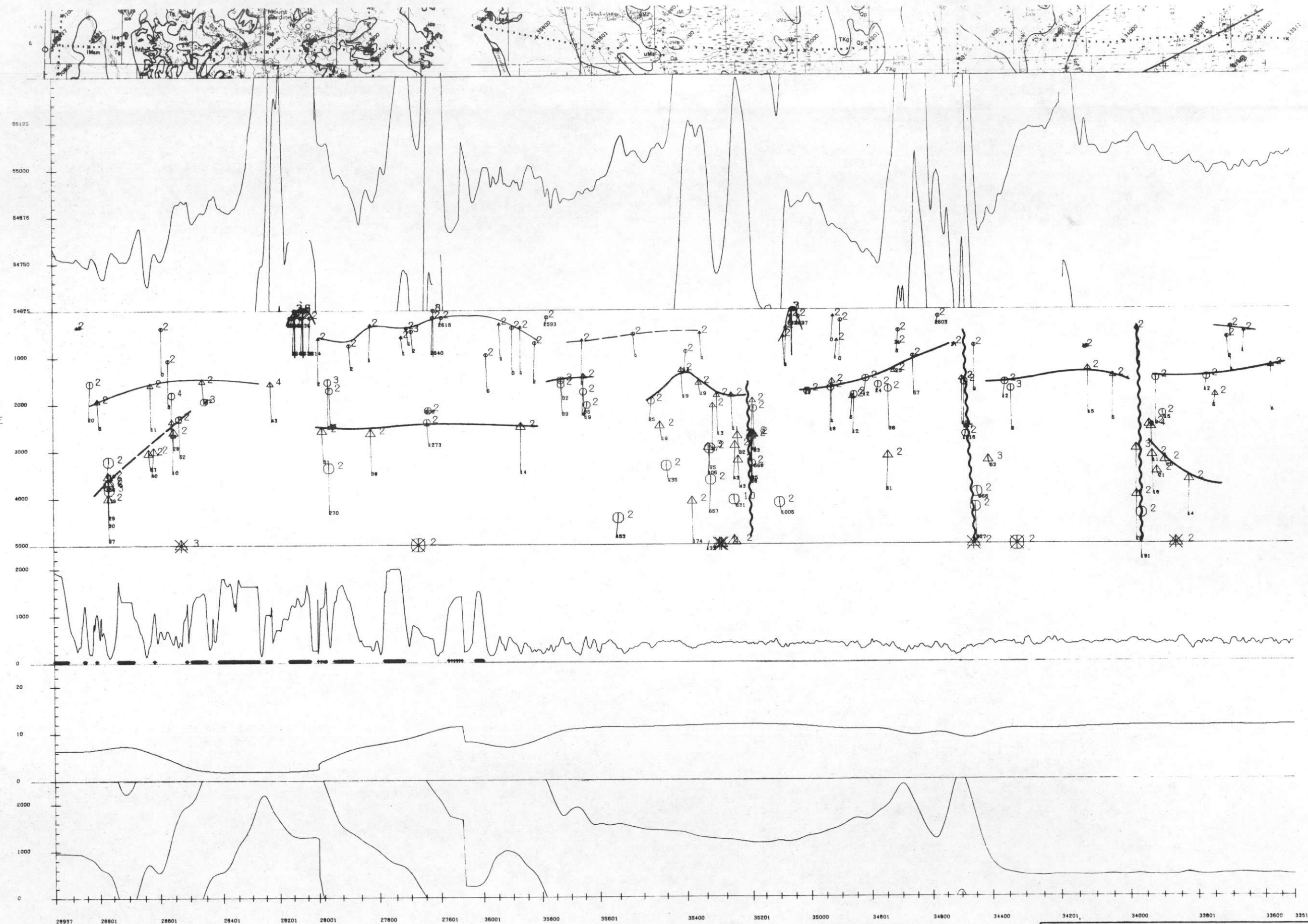
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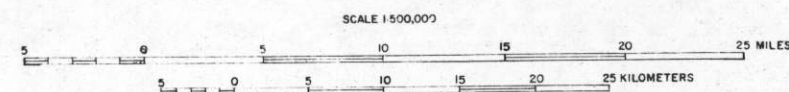
TEMP  
2.00 DEGREES/DIV

BAR ALT  
200 FT/DIV



P 6

↑ EXCEEDS ALTITUDE SPECIFICATIONS



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY
TYONEK, ALASKA
MAGNETIC AND ANCILLARY STACKED PROFILE DATA
1976-1978
BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006
DEPARTMENT OF ENERGY



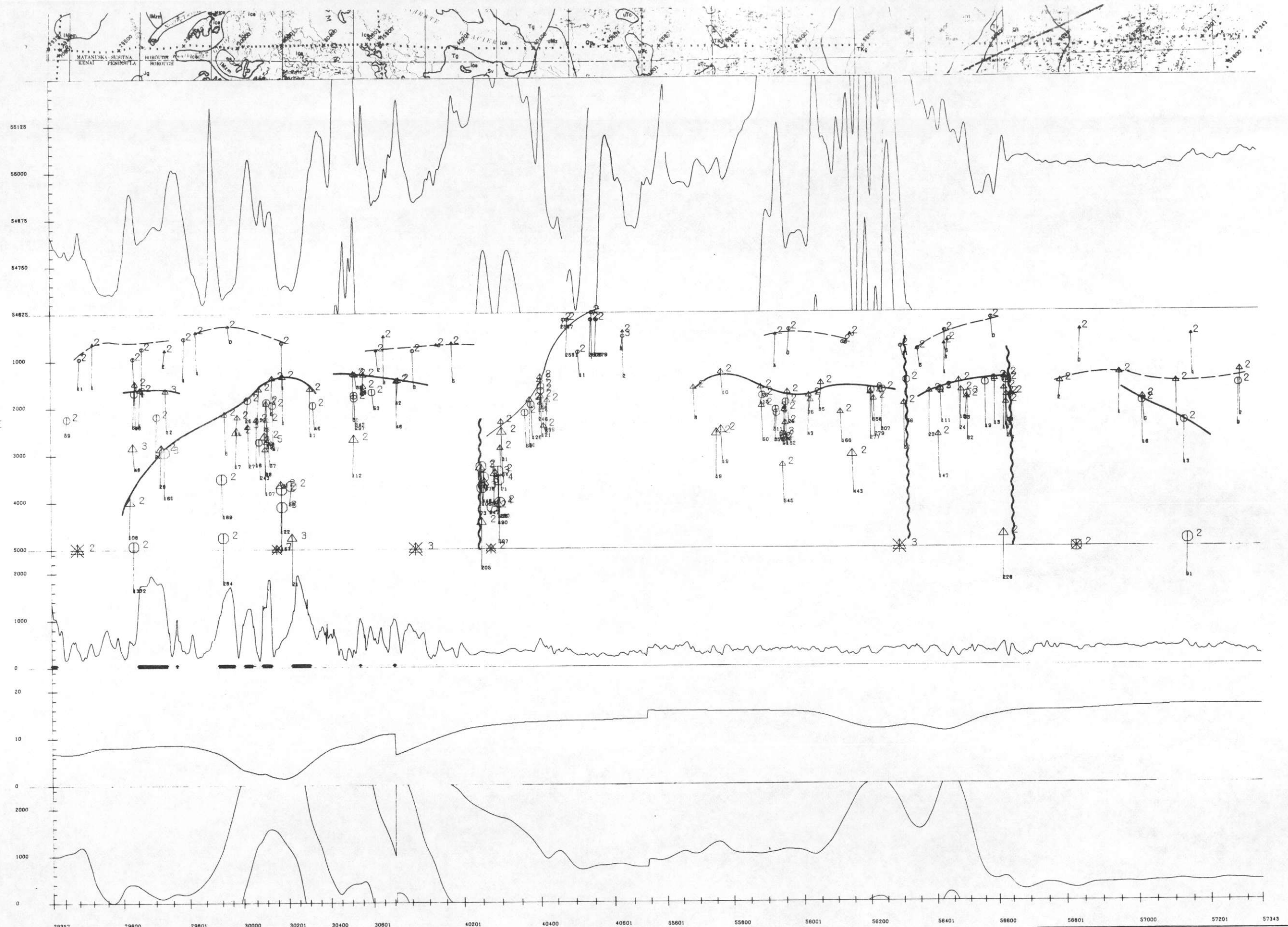
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2.00 DEGREES/DIV

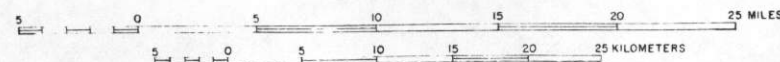
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P 7

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
MAGNETIC AND ANCILLARY STACKED PROFILE DATA  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006

DEPARTMENT OF ENERGY



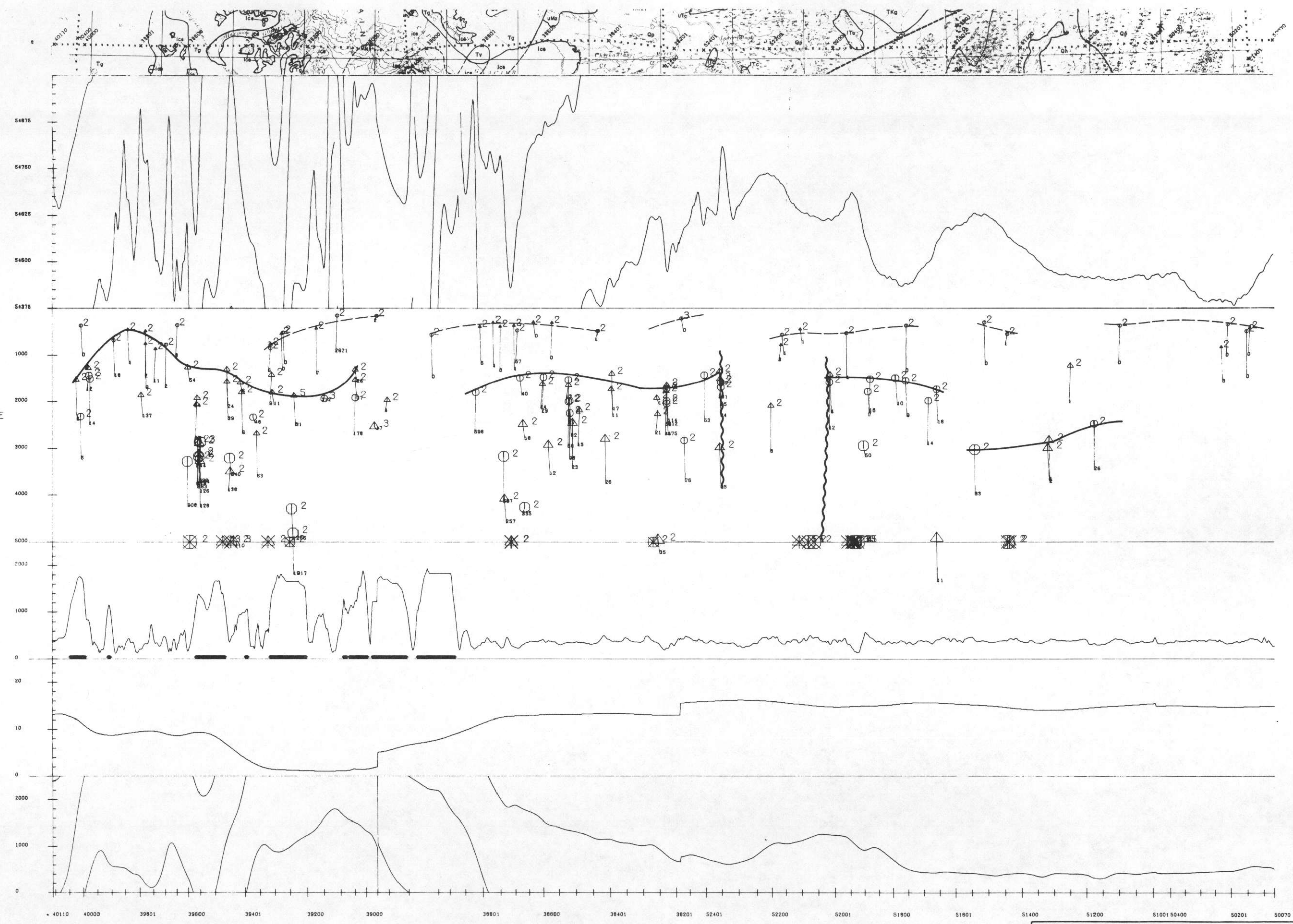
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2.00 DEGREES/DIV

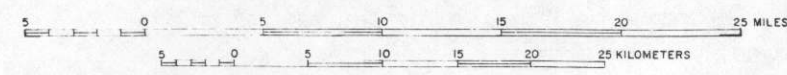
BAR ALT  
200 FT/DIV



P 8

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY	
TYONEK, ALASKA	
MAGNETIC AND ANCILLARY STACKED PROFILE DATA	
1976-1978	
BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006	
PREPARED BY: F. W.	
DEPARTMENT OF ENERGY	

MAG  
25 GAMMAS/DIV

MAG SOURCE  
DEPTH  
1000 FT/DIV

ALT  
200 FT/DIV

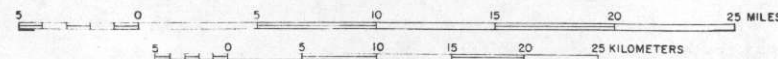
TEMP  
2.00 DEGREES/DIV

BAR ALT  
200 FT/DIV

P 9

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
MAGNETIC AND ANCILLARY STACKED PROFILE DATA  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



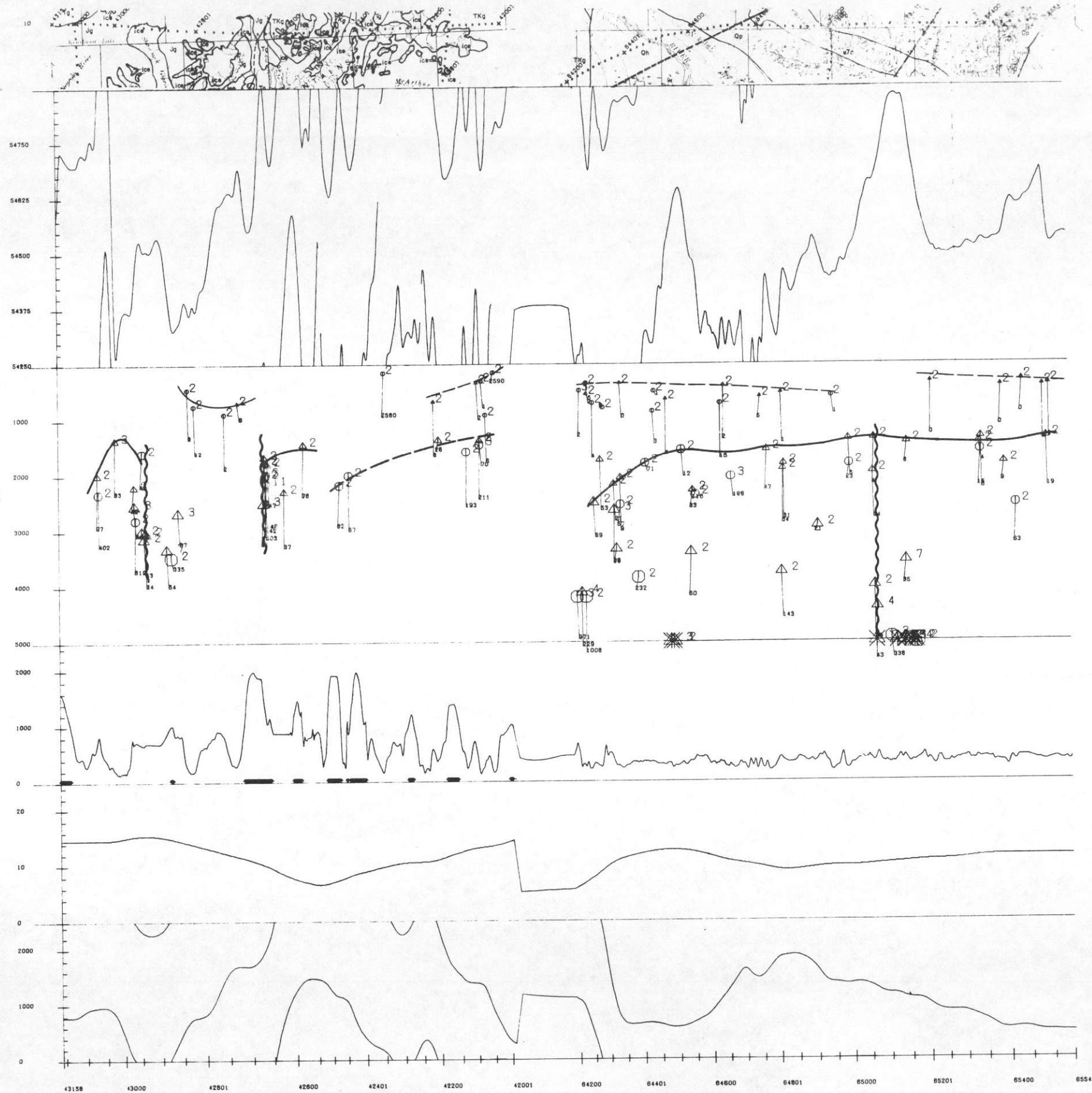
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DEPTH  
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TEMP  
2.00 DEGREES/DIV

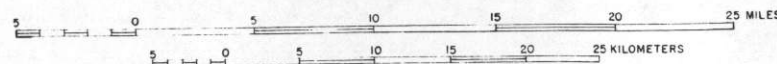
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200 FT/DIV



P 10

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

MAGNETIC AND ANCILLARY STACKED PROFILE DATA

1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY

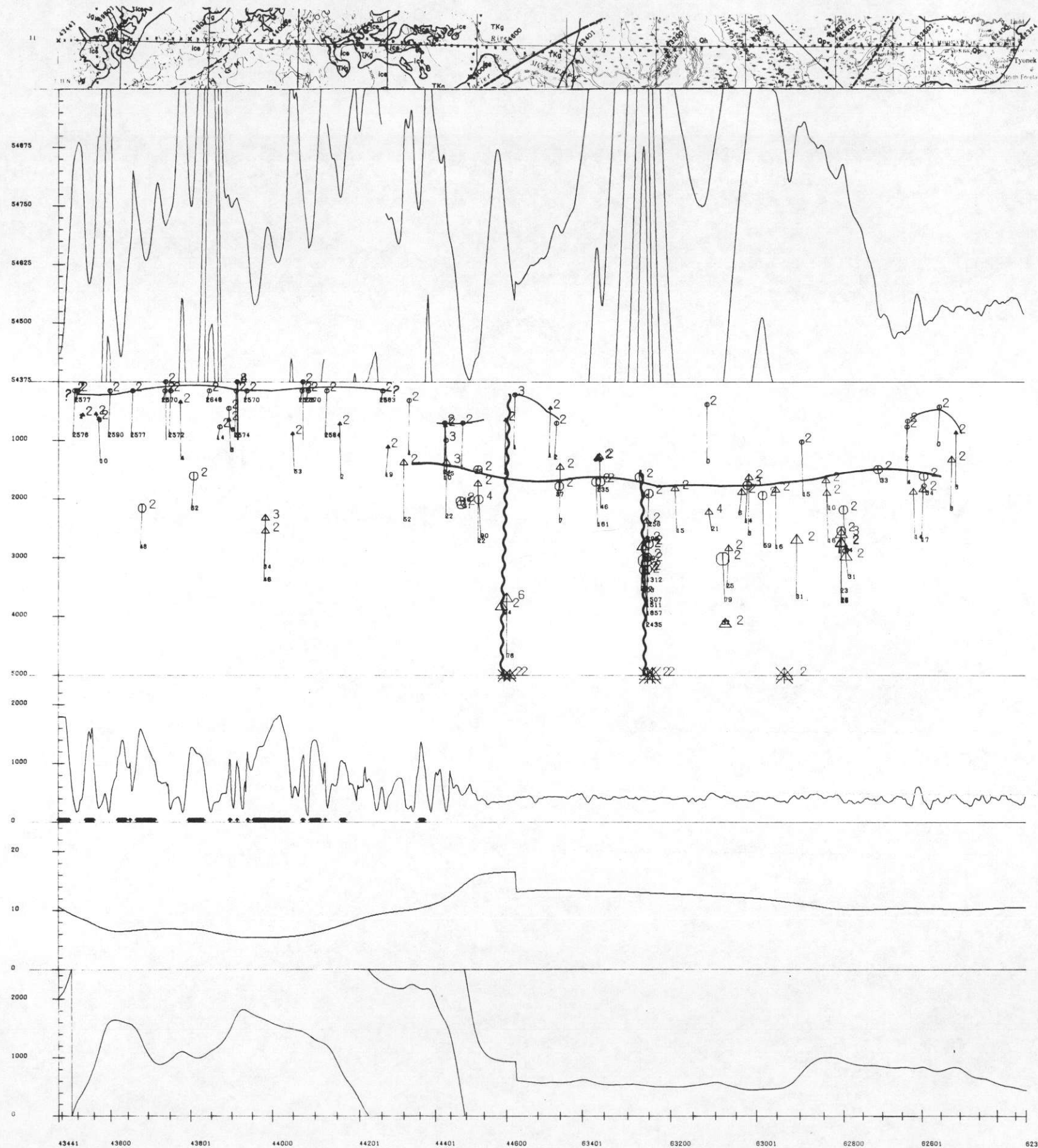
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ALT  
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2.00 DEGREES/DIV

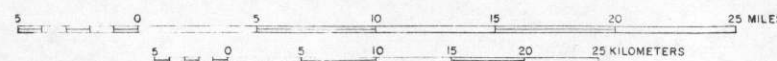
BAR ALT  
200 FT/DIV



P 11

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



COOK

NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
MAGNETIC AND ANCILLARY STACKED PROFILE DATA  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
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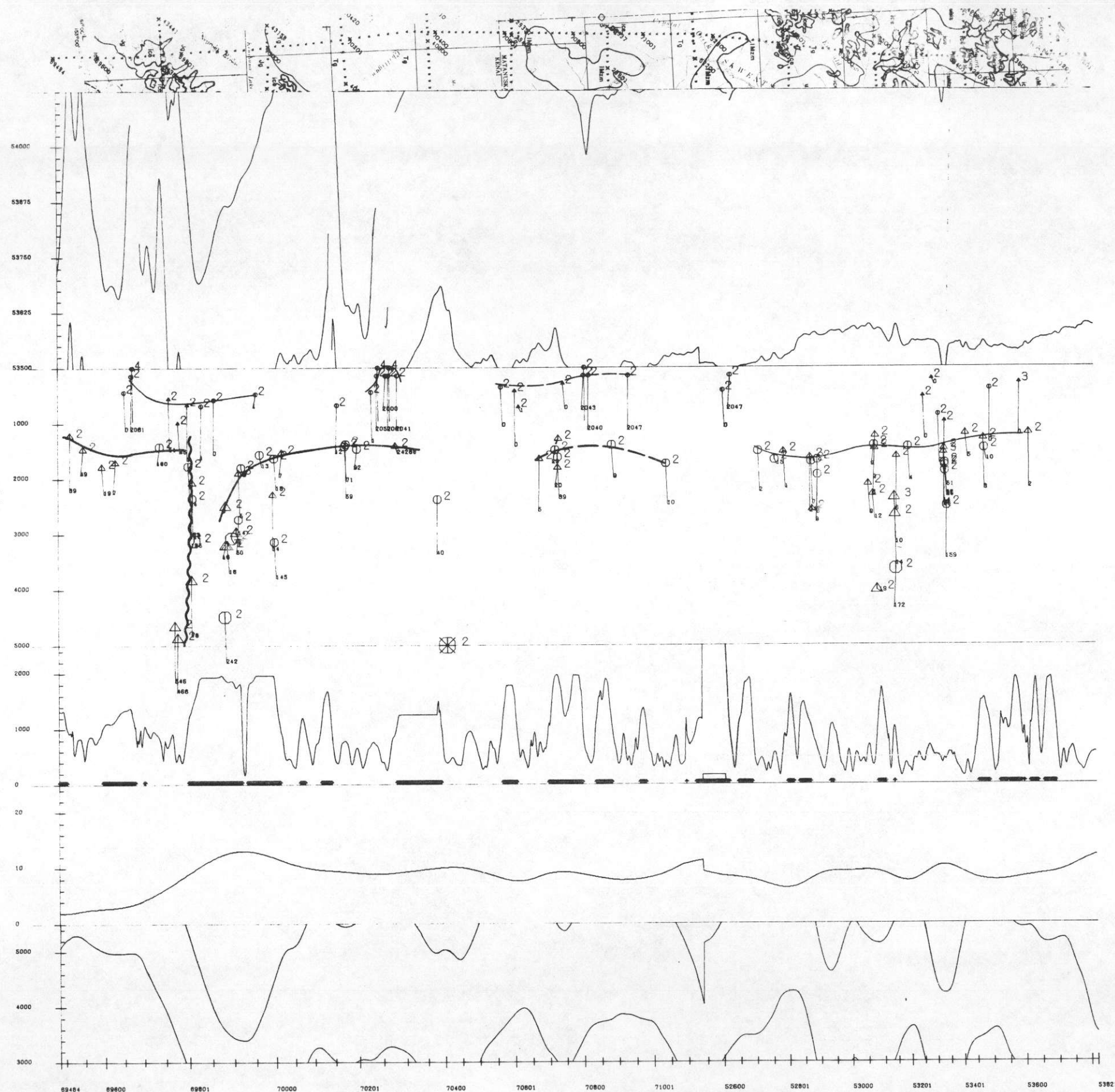
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DEPTH  
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ALT  
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2.00 DEGREES/DIV

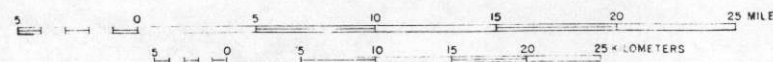
BAR ALT  
200 FT/DIV



TL 200

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

MAGNETIC AND ANCILLARY STACKED PROFILE DATA

1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006

DEPARTMENT OF ENERGY

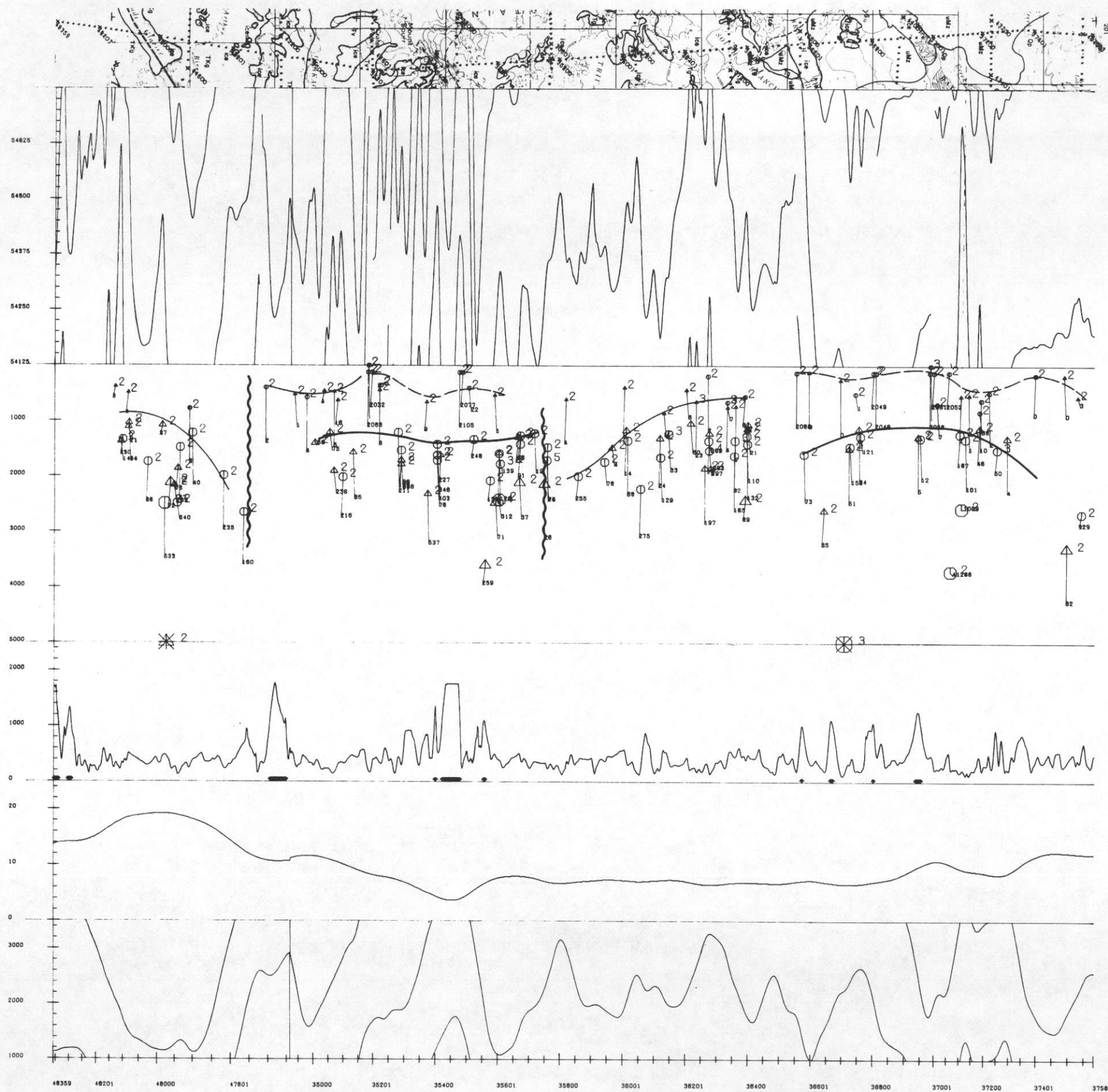
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2.00 DEGREES/DIV

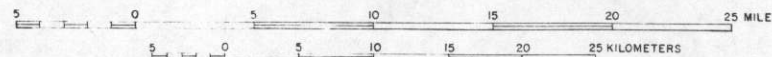
BAR ALT  
200 FT/DIV



TL 201

↑ EXCEEDS ALTITUDE SPECIFICATIONS

SCALE 1:500,000



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
MAGNETIC AND ANCILLARY STACKED PROFILE DATA  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



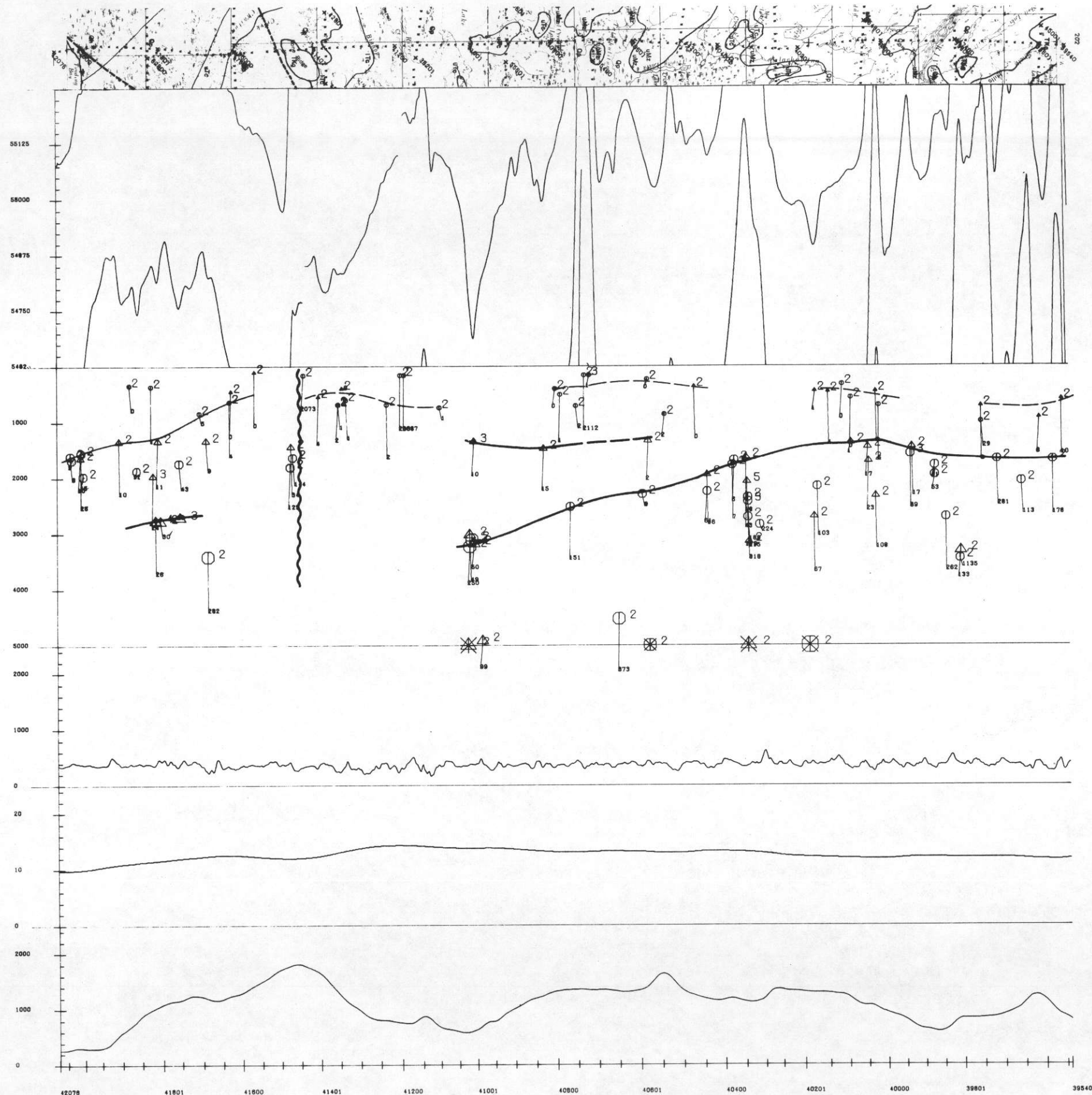
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25 GRAMS/DIV

MAG SOURCE  
DEPTH  
1000 FT/DIV

ALT  
200 FT/DIV

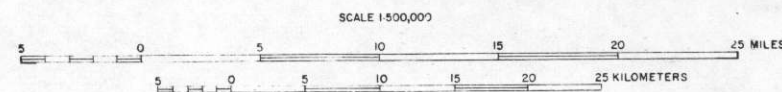
TEMP  
2.00 DEGREES/DIV

BAR ALT  
200 FT/DIV



TL 202

↑ EXCEEDS ALTITUDE SPECIFICATIONS



<p>NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY</p>
<p>TYONEK, ALASKA</p>
<p>MAGNETIC AND ANCILLARY STACKED PROFILE DATA</p>
<p>1976-1978</p>
<p>BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006</p>
<p>PREPARED FOR DEPARTMENT OF ENERGY</p>

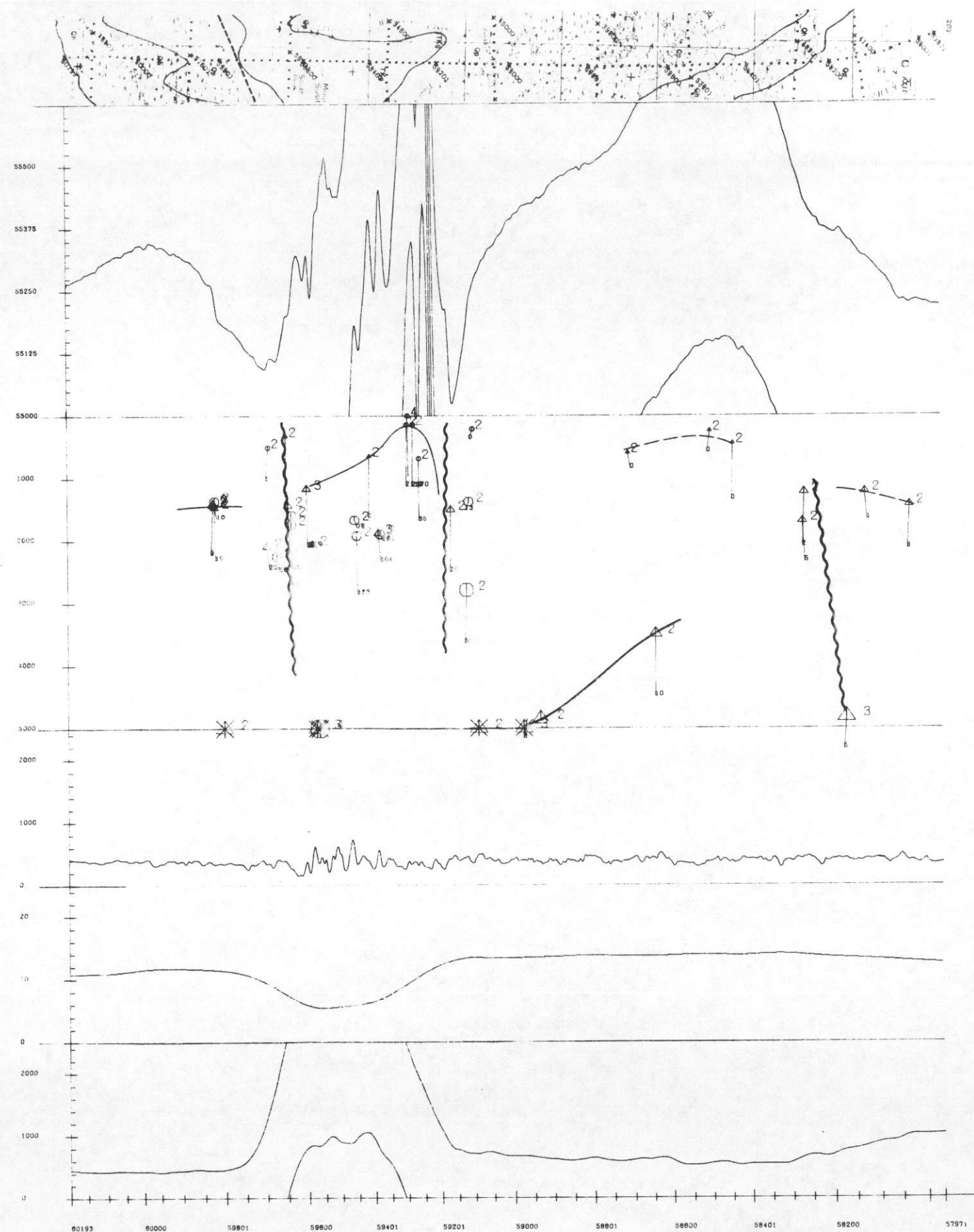
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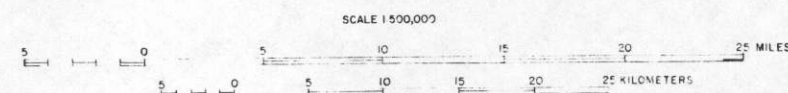
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2.000 DEGREES/DIV

BAR ALT  
200 FT/DIV



1L 203

↑ EXCEEDS ALTITUDE SPECIFICATIONS



NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA  
MAGNETIC AND ANCILLARY STACKED PROFILE DATA  
1976-1978

BY: LKB RESOURCES, INC. 55 BUCK ROAD HUNTINGDON VALLEY, PENNA. 19006

PREPARED FOR  
DEPARTMENT OF ENERGY



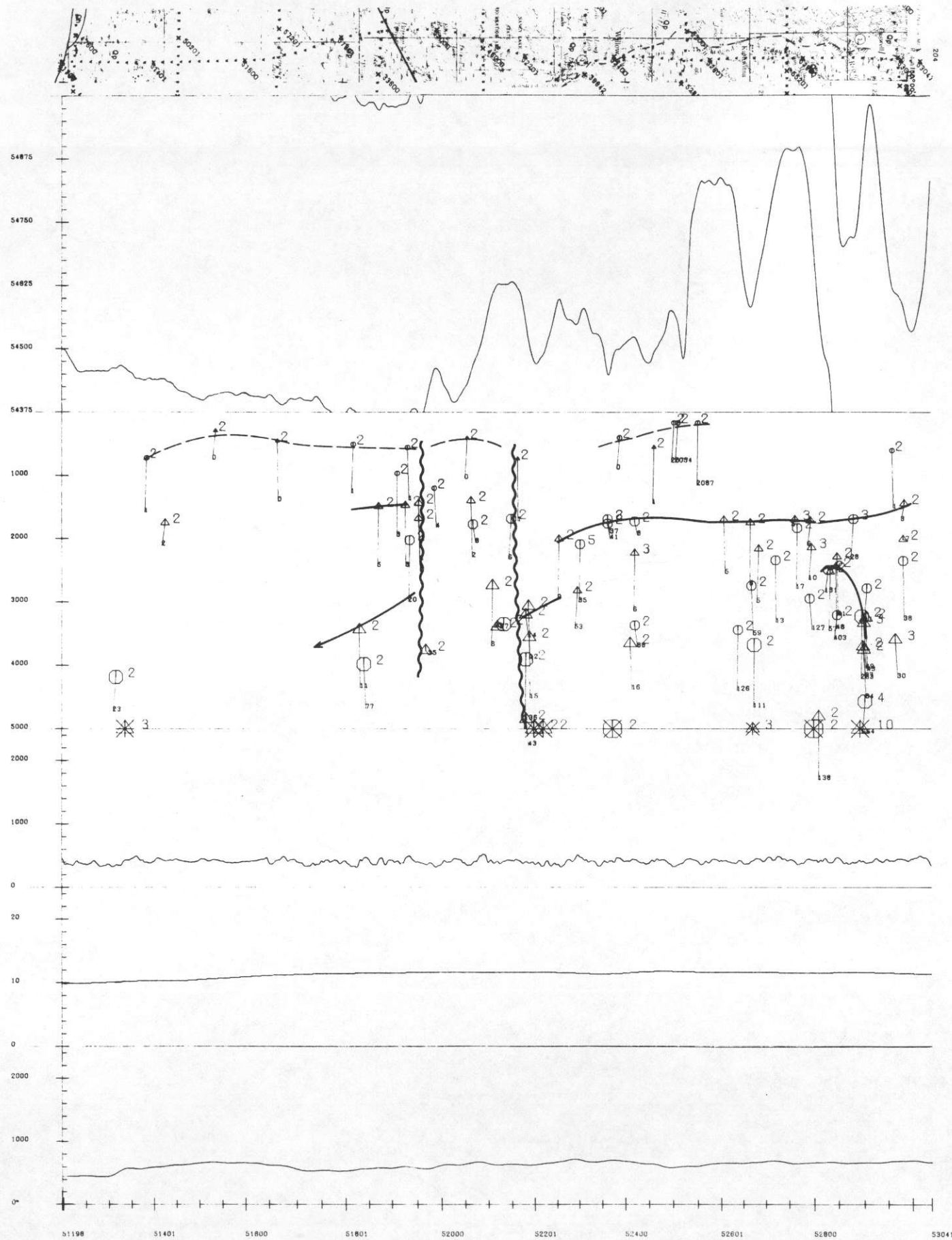
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MAG SOURCE  
DEPTH  
1000 FT/DIV

ALT  
200 FT/DIV

TEMP  
2.00 DEGREES/DIV

BAR ALT  
200 FT/DIV



TI 204

↑ FALLS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA RAY AND MAGNETIC  
RECONNAISSANCE SURVEY

TYONEK, ALASKA

MAGNETIC AND ANCILLARY STACKED PROFILE DATA

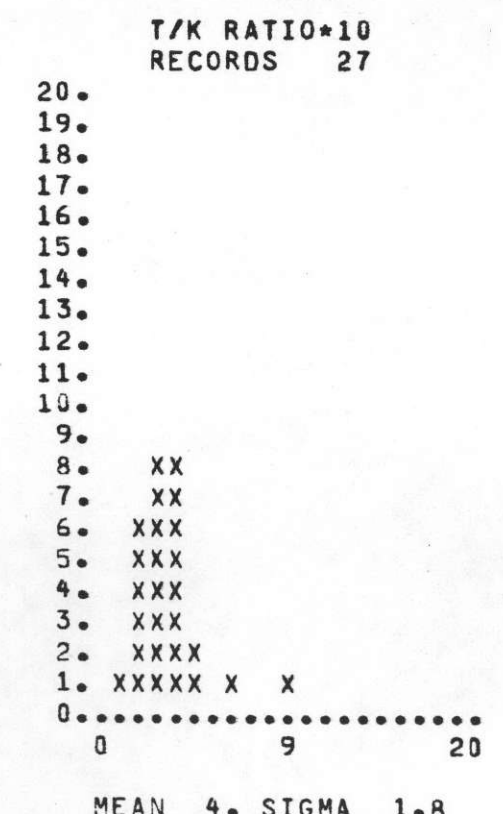
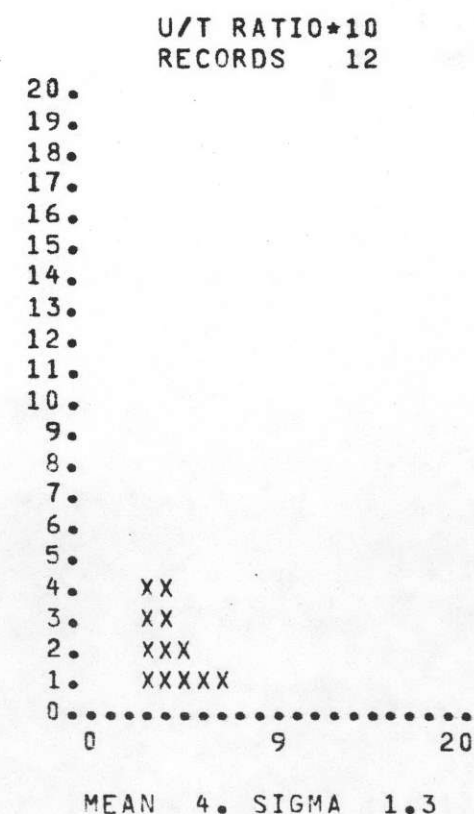
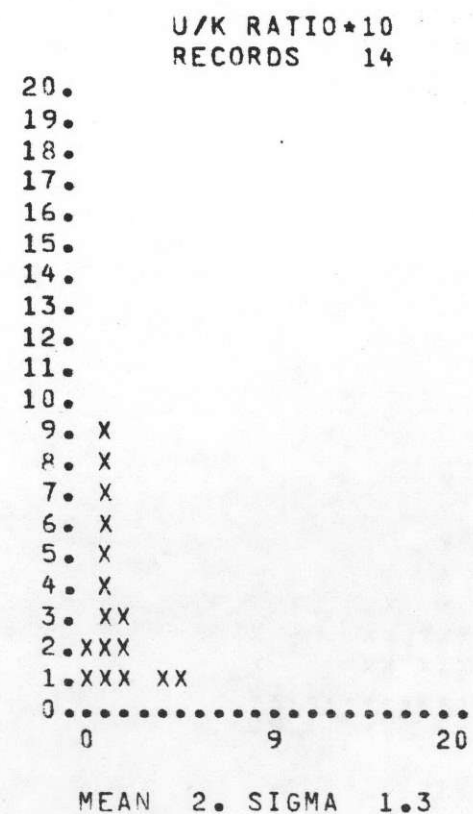
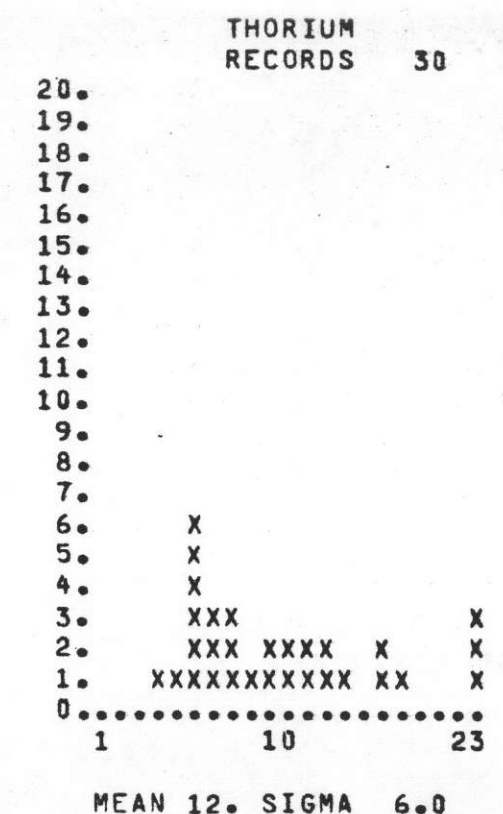
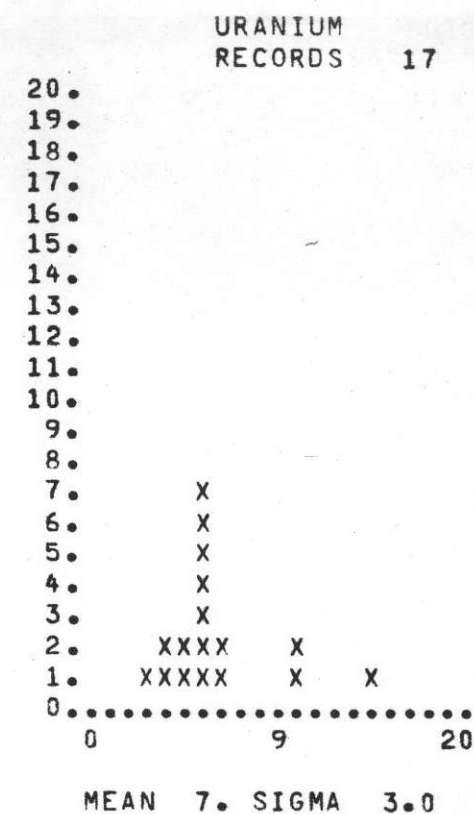
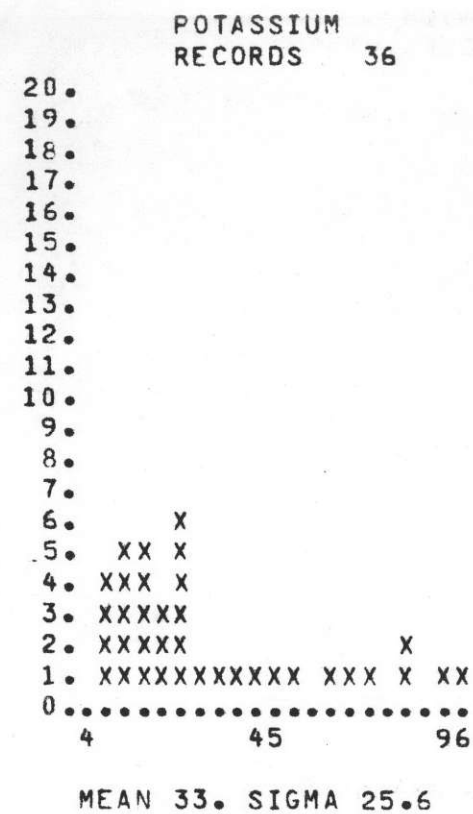
1976-1978

BY LKB RESOURCES, INC 55 BUCK ROAD HUNTINGDON VALLEY, PENNA 19006

PREPARED BY

DEPARTMENT OF ENERGY

TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT WATER





TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT ICE

POTASSIUM  
RECORDS 272

63.X  
59.X  
56.XX  
53.XX  
50.XX  
47.XX  
44.XX  
40.XXX  
37.XXX  
34.XXX  
31.XXX  
28.XXX  
25.XXX  
22.XXXX  
18.XXXXXX  
15.XXXXXX  
12.XXXXXX  
9.XXXXXXX  
6.XXXXXXXX X  
3.XXXXXXXX XX X  
0.....  
12 123 260

MEAN 47. SIGMA 49.5

URANIUM  
RECORDS 134

28. X  
26. XXX  
25. XXX  
23. XXX  
22. XXX  
21. XXX  
19. XXXX  
18. XXXX  
16. XXXX  
15. XXXX  
14. XXXX  
12. XXXX  
11. XXXX  
9. XXXX  
8. XXXX  
7. XXXX  
5. XXXXX X X  
4. XXXXXX XX X  
2. XXXXXX XX X X X  
1. XXXXXXXXXXXX XXXX X  
0.....  
2 25 54

MEAN 12. SIGMA 10.4

THORIUM  
RECORDS 239

81. X  
76. X  
72. X  
68. X  
64. X  
60. XX  
56. XX  
52. XX  
48. XX  
44. XX  
40. XX  
36. XX  
32. XX  
28. XX  
24. XXX  
20. XXX  
16.XXXXXX  
12.XXXXXX  
8.XXXXXX  
4.XXXXXX X X X  
0.....  
3 39 83

MEAN 15. SIGMA 14.5

U/K RATIO\*10  
RECORDS 96

56. X  
53. X  
50. X  
47. X  
44. X  
42. X  
39. X  
36. X  
33. X  
30. X  
28. X  
25. X  
22. X  
19.XX  
16.XXX  
14.XXX  
11.XXX  
8.XXX  
5.XXXXX  
2.XXXXXXX X  
0.....  
0 9 20

MEAN 2. SIGMA 1.8

U/T RATIO\*10  
RECORDS 115

21. XX  
20. XX  
19. XX  
18. XXX  
17. XXX  
16. XXX  
15. XXX  
14. XXX  
13. XXX  
12. XXX  
10. XXXXX  
9. XXXXX  
8. XXXXXX  
7. XXXXXX X  
6. XXXXXX X  
5. XXXXXX X  
4. XXXXXX X  
3. XXXXXX X X  
2. XXXXXXXXXXXX XX X  
1. XXXXXXXXXXXX XX X  
0.....  
0 9 20

MEAN 7. SIGMA 3.7

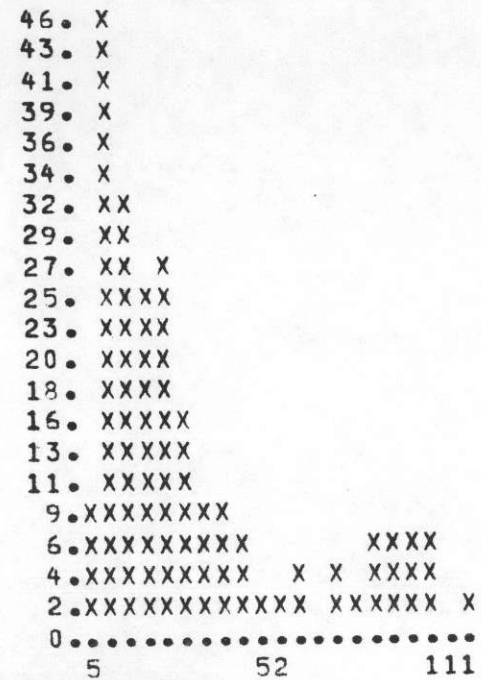
T/K RATIO\*10  
RECORDS 209

56. X  
54. X  
51. XX  
48. XX  
45. XX  
42. XX  
39. XX  
37. XX  
34. XXX  
31. XXX  
28. XXX  
25. XXXX  
22. XXXX  
19. XXXX  
17. XXXXX  
14. XXXXX  
11. XXXXX  
8. XXXXXX  
5. XXXXXXX  
2. XXXXXXX X  
0.....  
0 9 20

MEAN 3. SIGMA 2.0

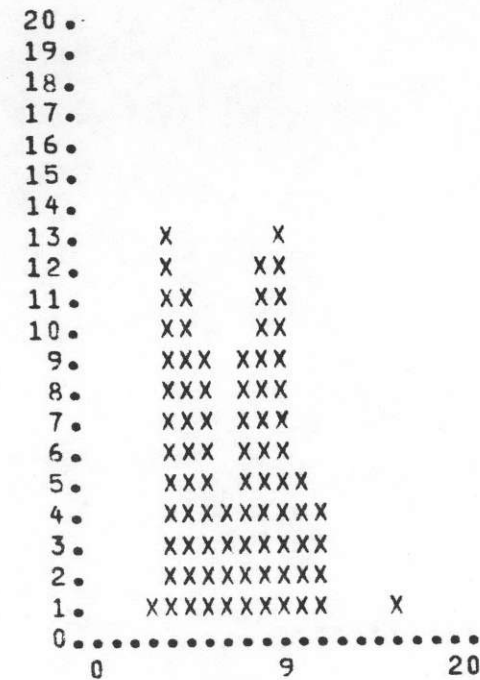
TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT QH

POTASSIUM  
RECORDS 227



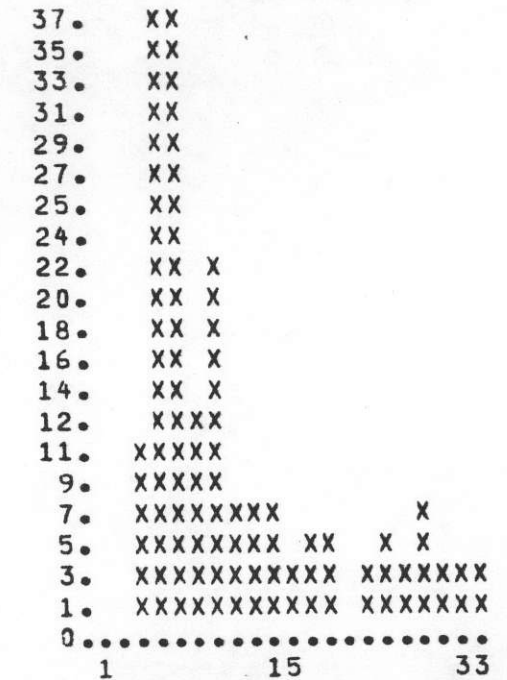
MEAN 32. SIGMA 28.5

URANIUM  
RECORDS 82



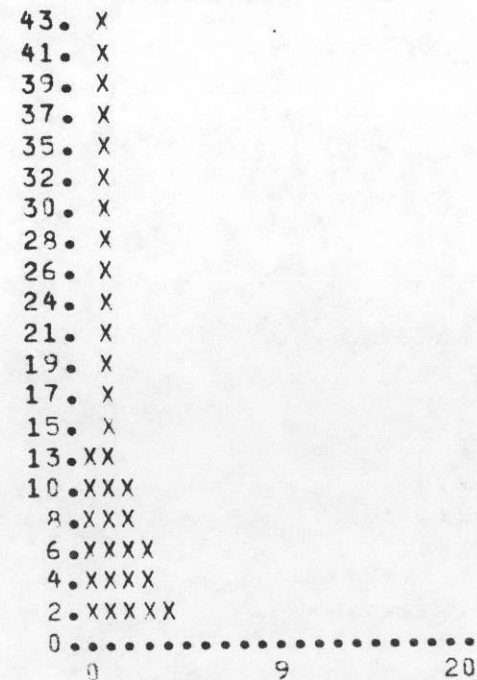
MEAN 8. SIGMA 2.7

THORIUM  
RECORDS 187



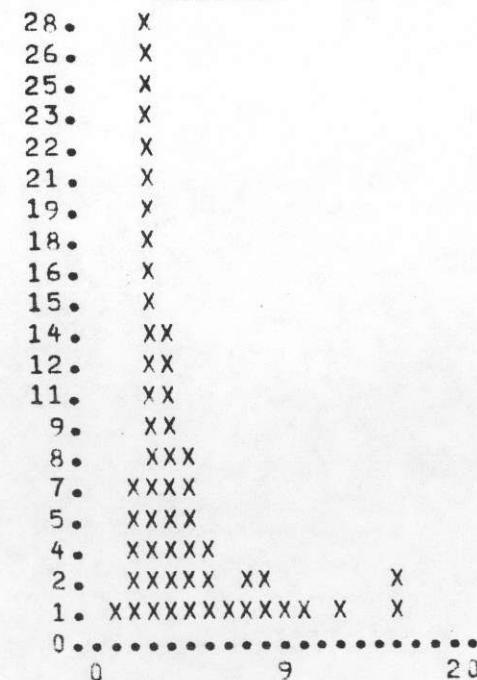
MEAN 12. SIGMA 8.2

U/K RATIO\*10  
RECORDS 66



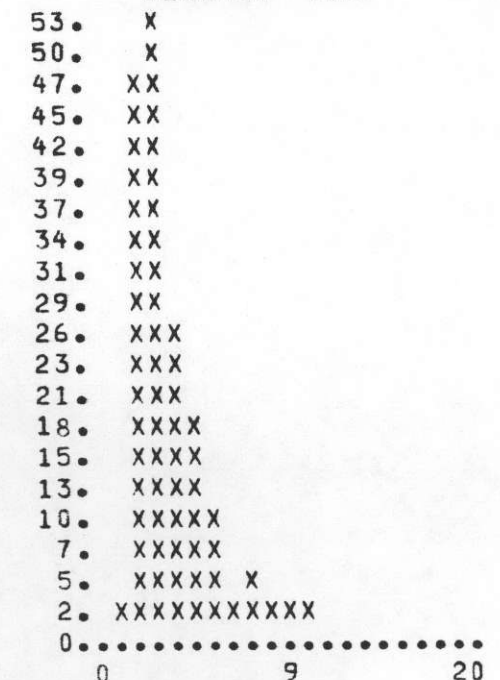
MEAN 2. SIGMA .9

U/T RATIO\*10  
RECORDS 72



MEAN 5. SIGMA 2.9

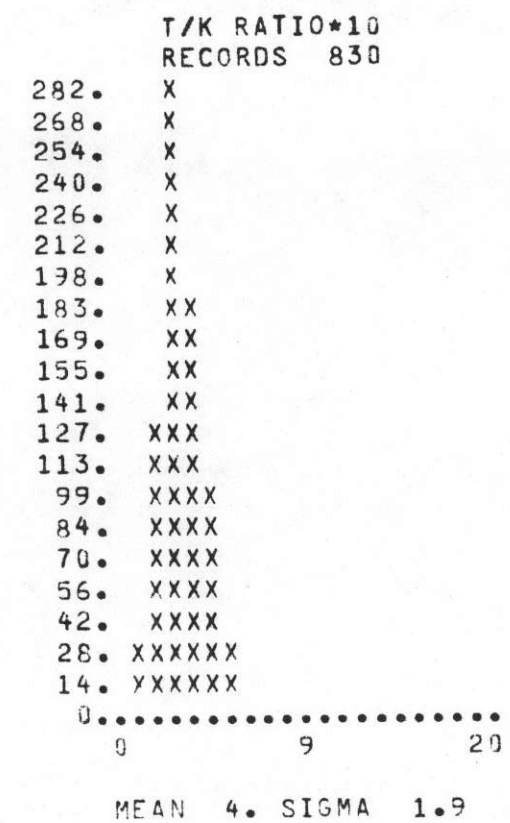
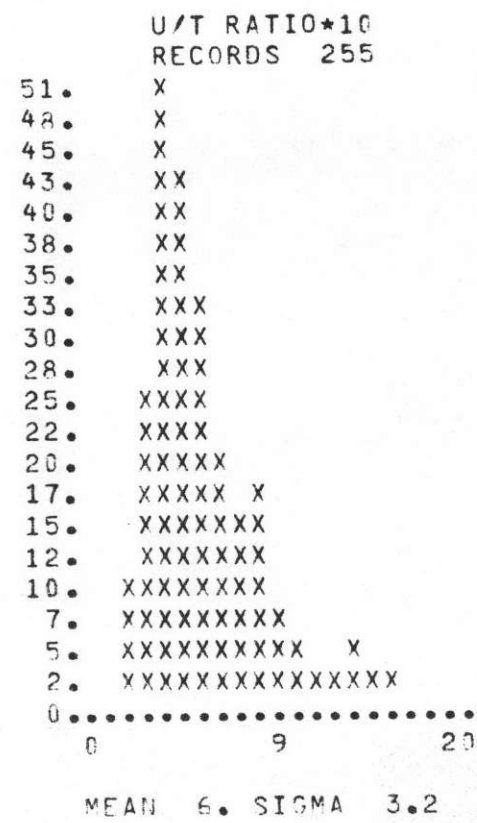
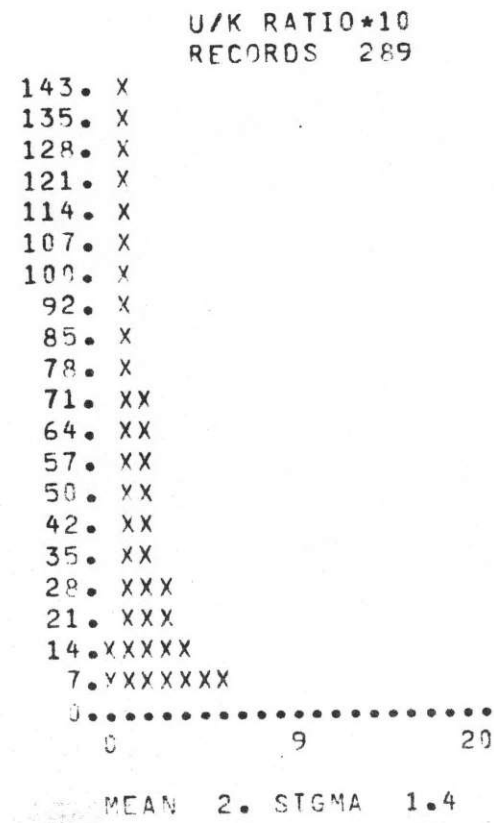
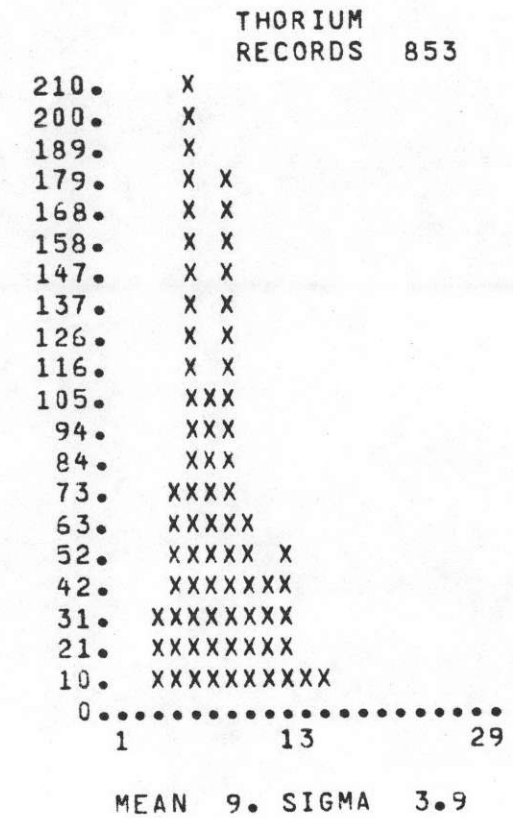
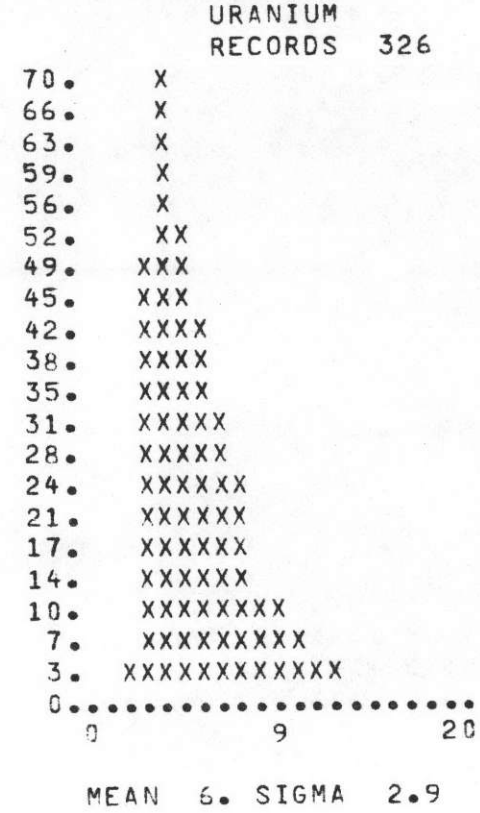
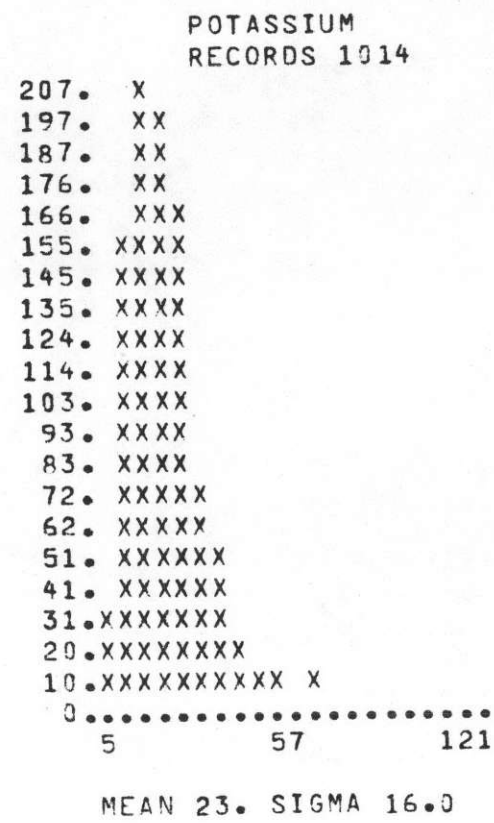
T/K RATIO\*10  
RECORDS 180



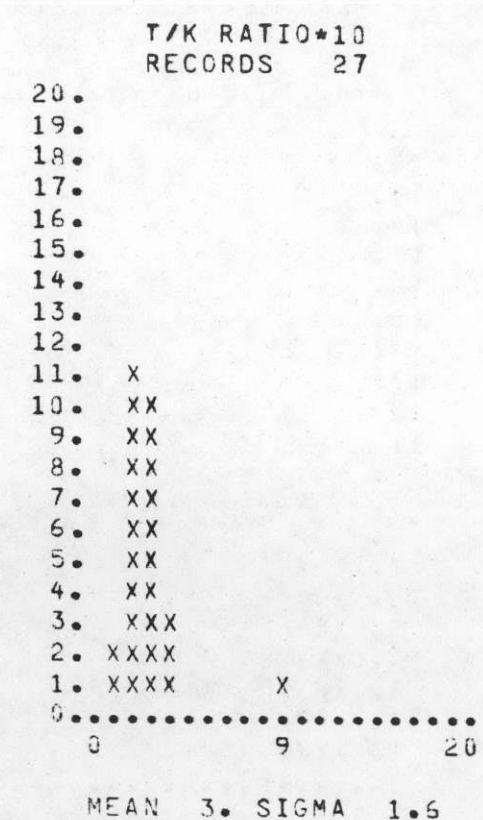
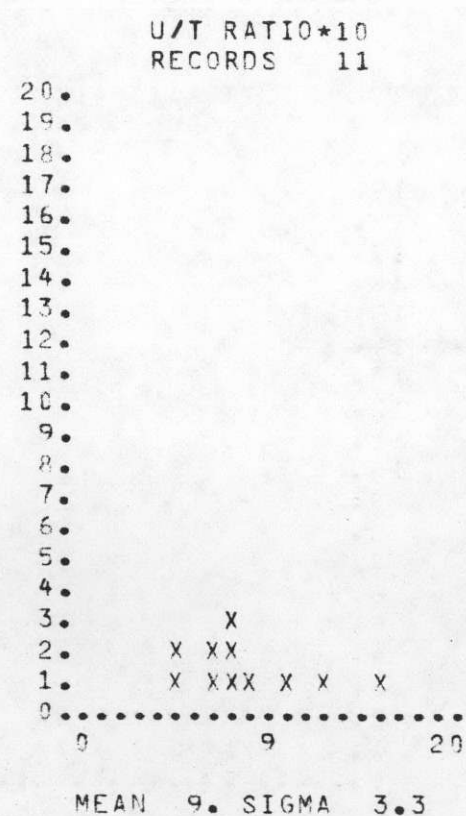
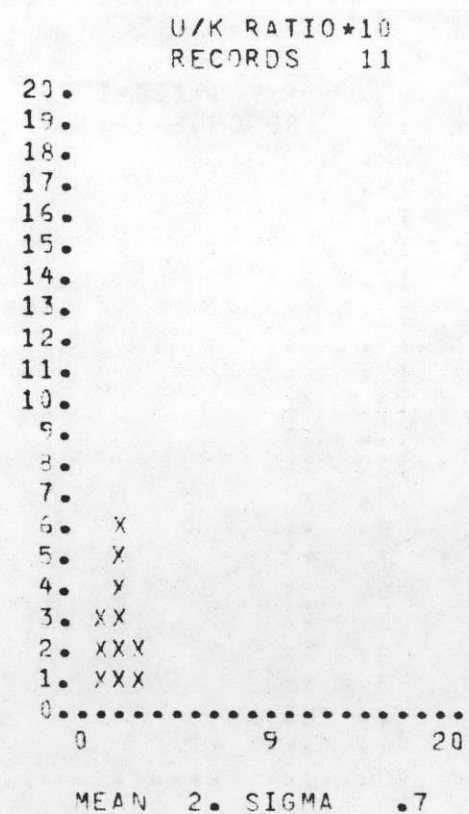
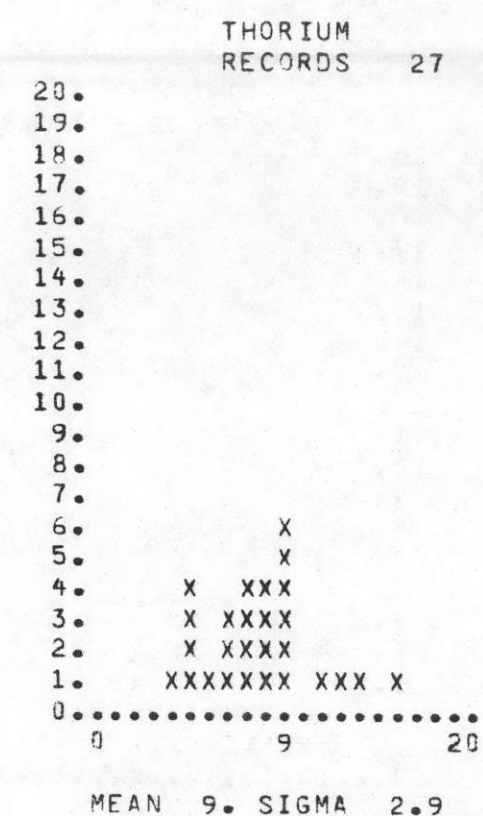
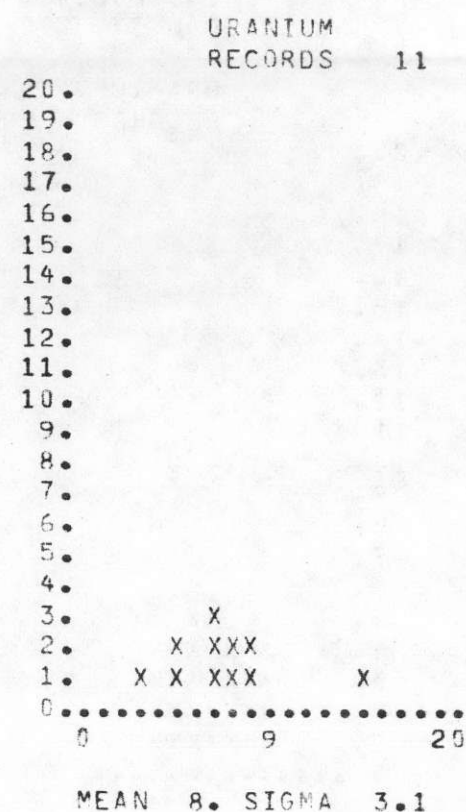
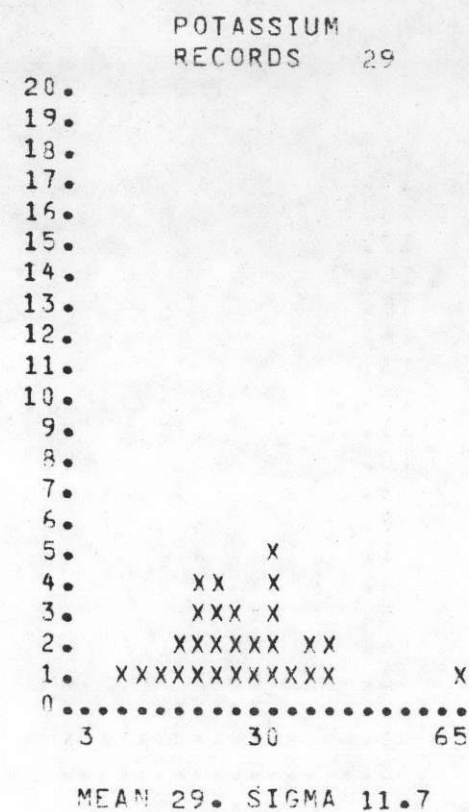
MEAN 4. SIGMA 2.2



TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT GP

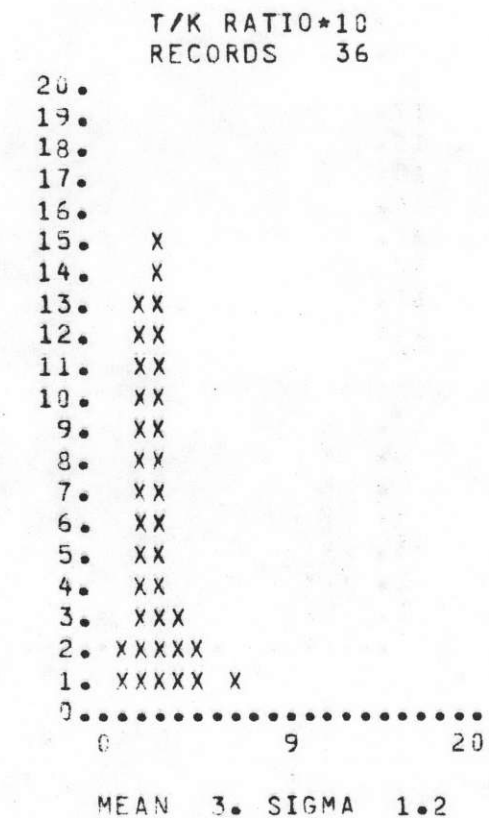
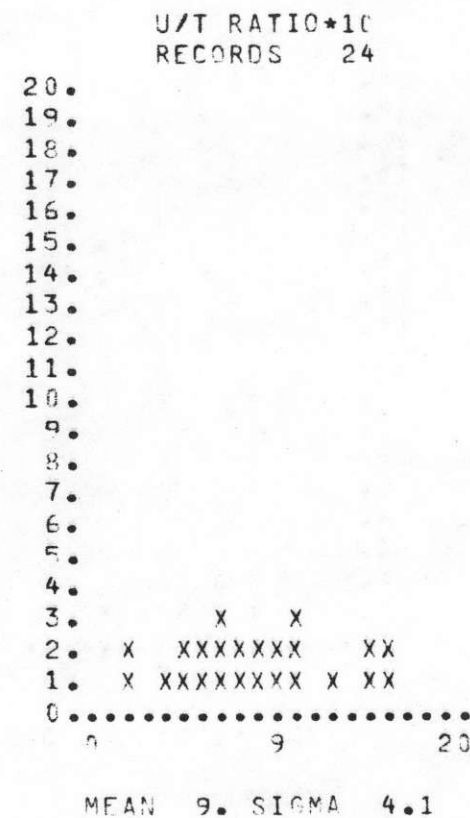
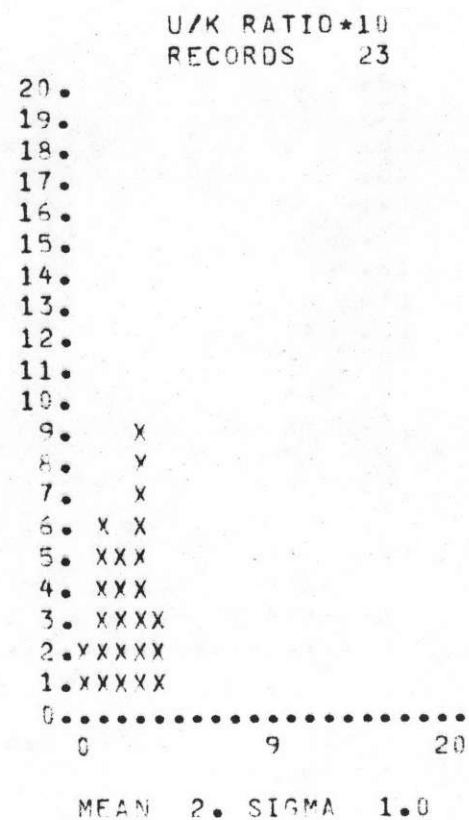
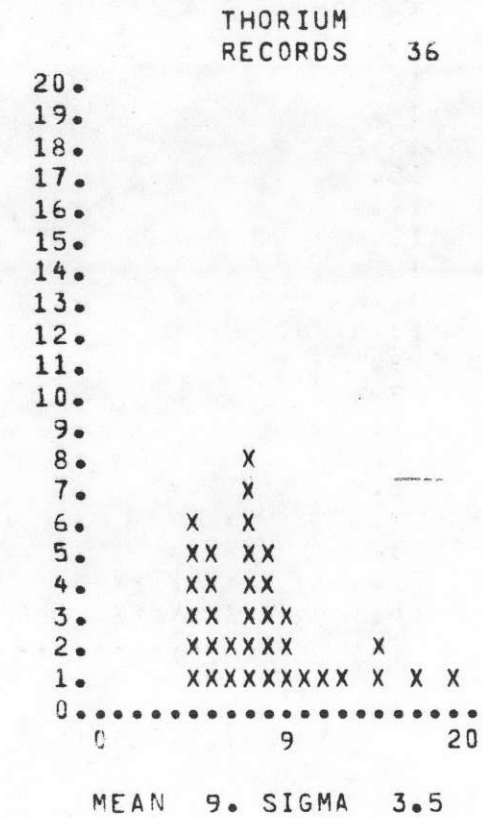
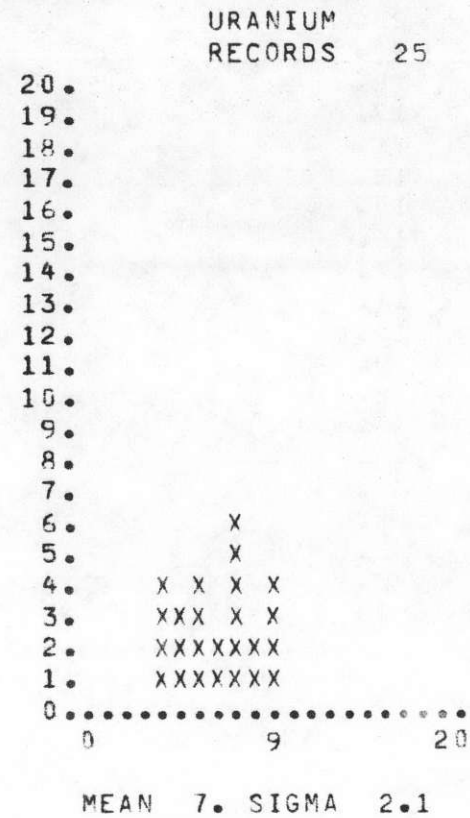
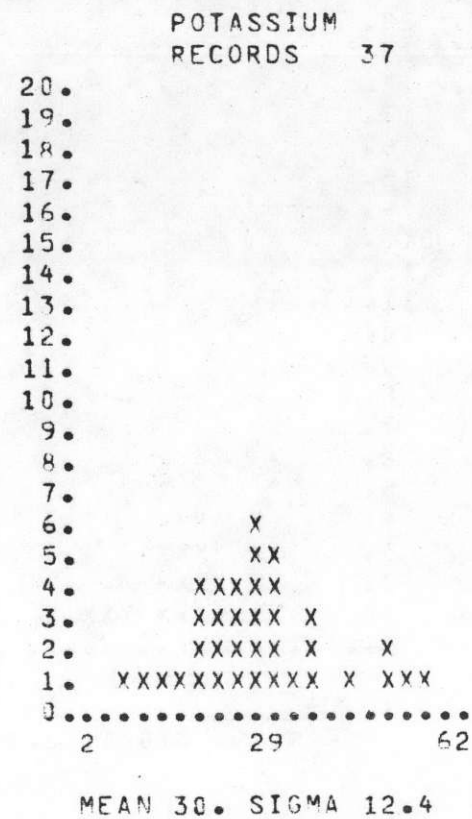


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GEOLOGIC UNIT UTC

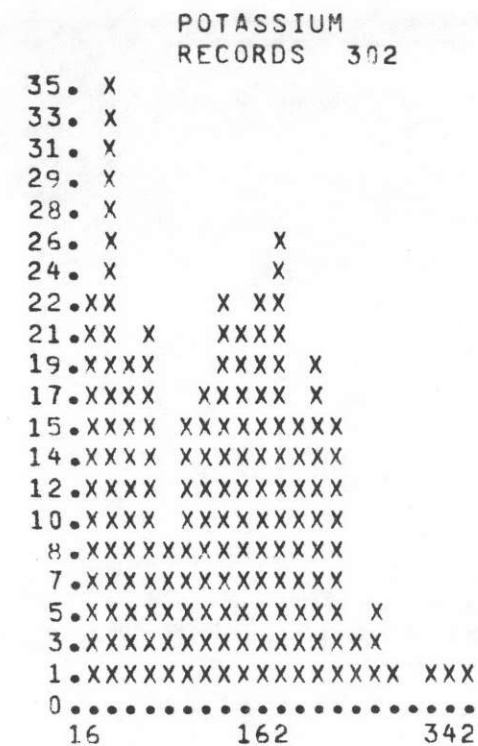




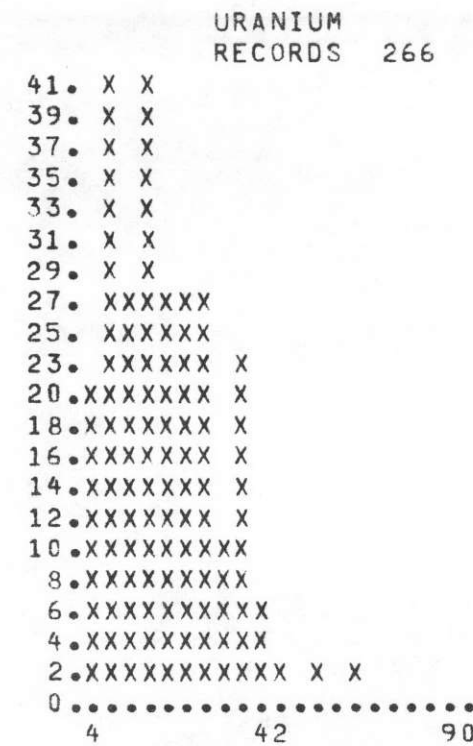
TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT LTC



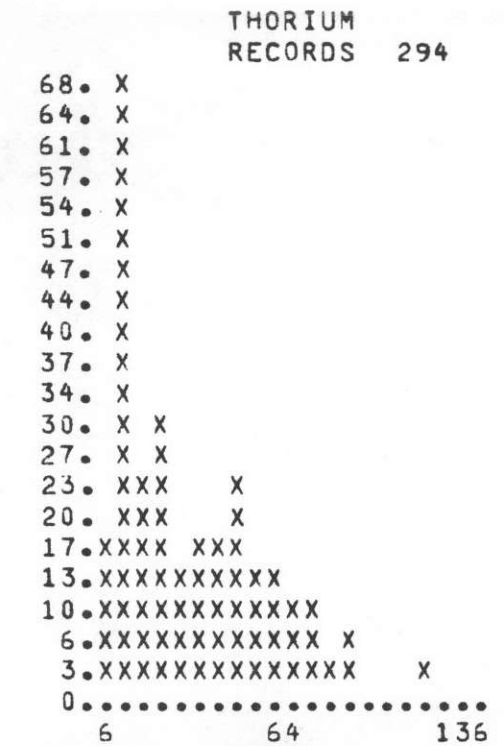
TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT TG



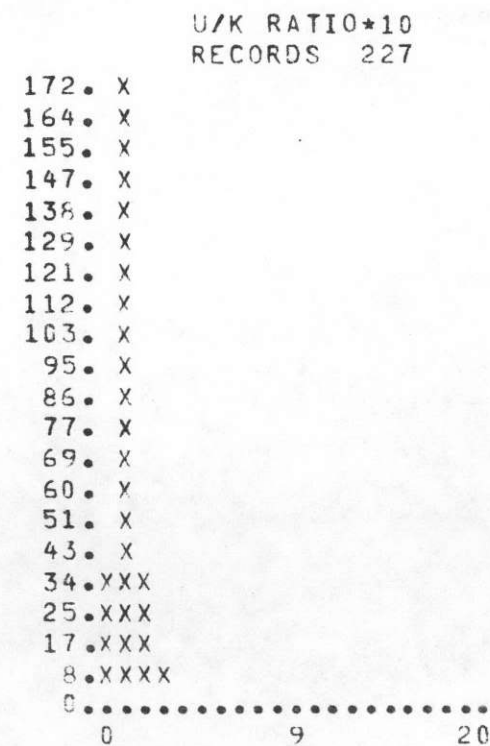
MEAN 119. SIGMA 75.9



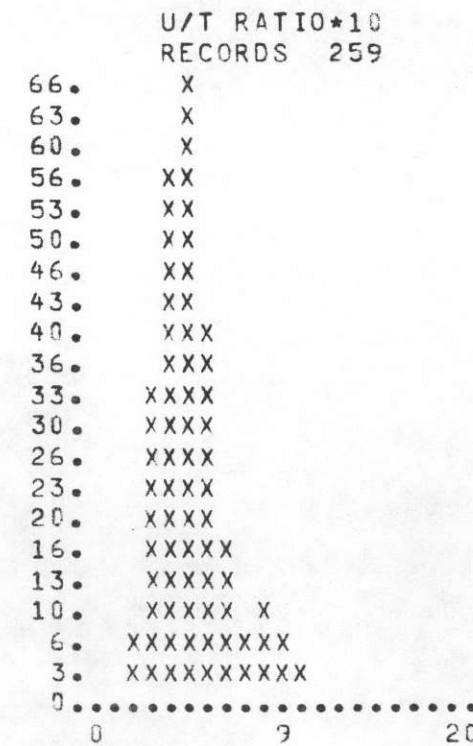
MEAN 20. SIGMA 13.9



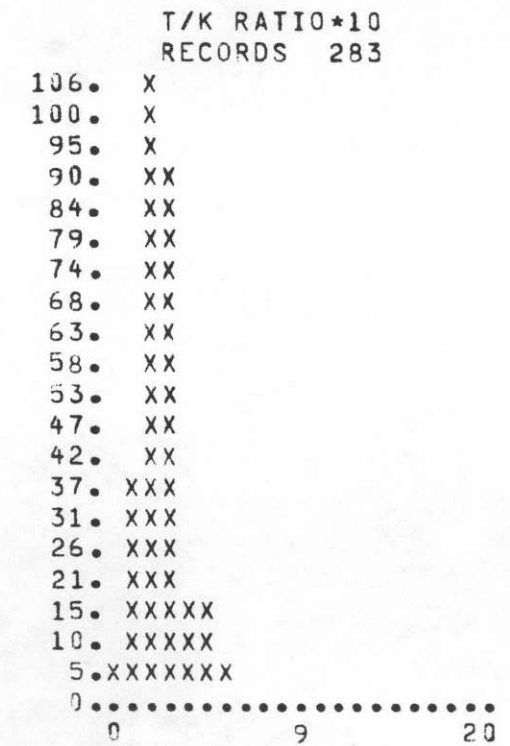
MEAN 36. SIGMA 27.9



MEAN 1. SIGMA 1.4



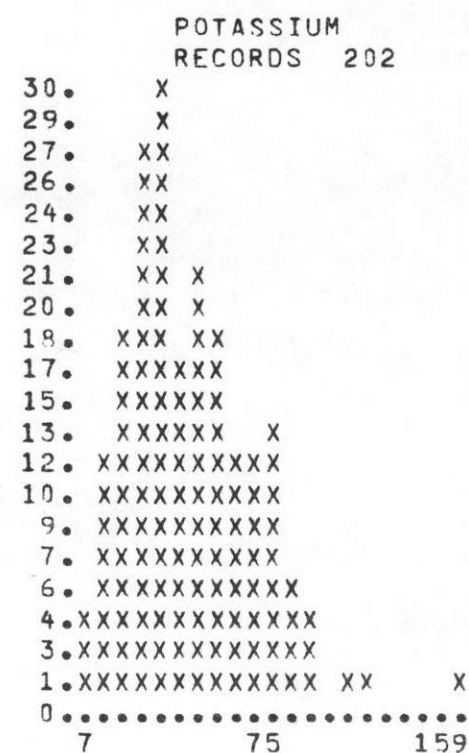
MEAN 5. SIGMA 2.1



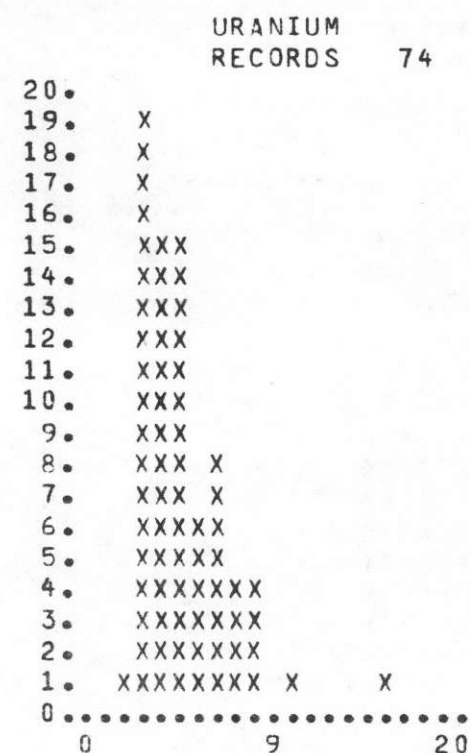
MEAN 3. SIGMA 1.4



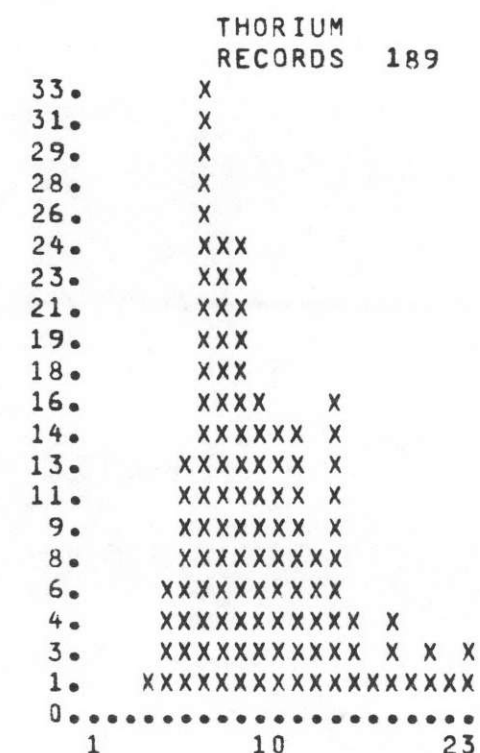
TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT TKG



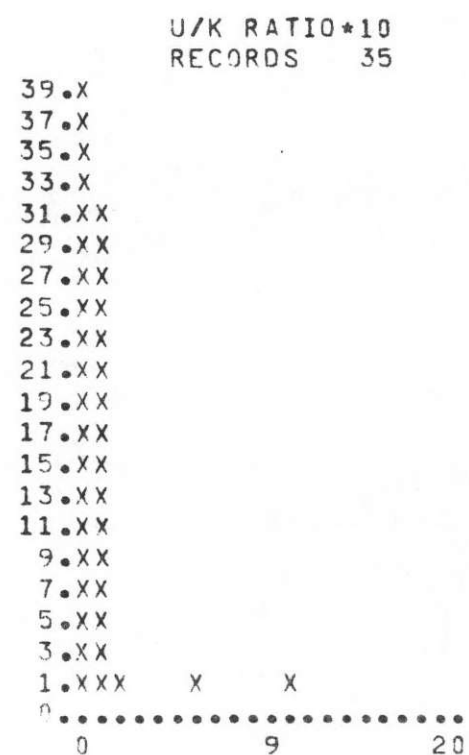
MEAN 47. SIGMA 26.6



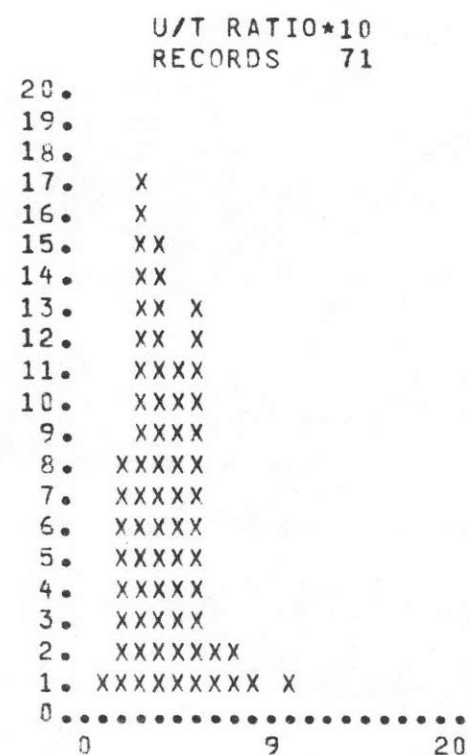
MEAN 5. SIGMA 2.3



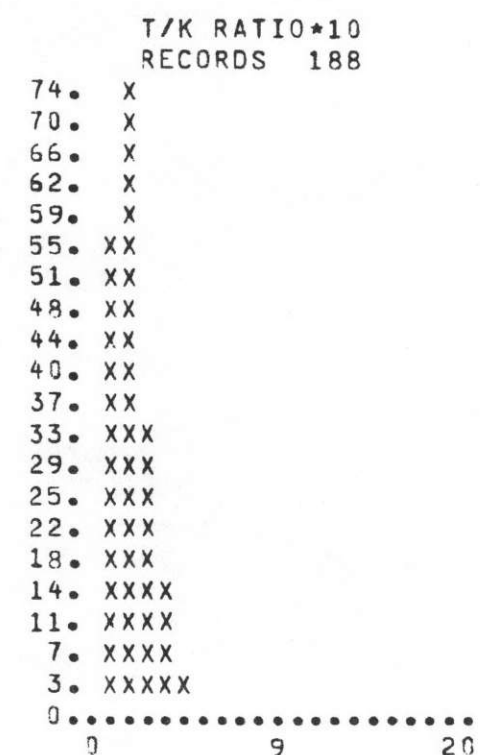
MEAN 11. SIGMA 4.1



MEAN 1. SIGMA 1.9

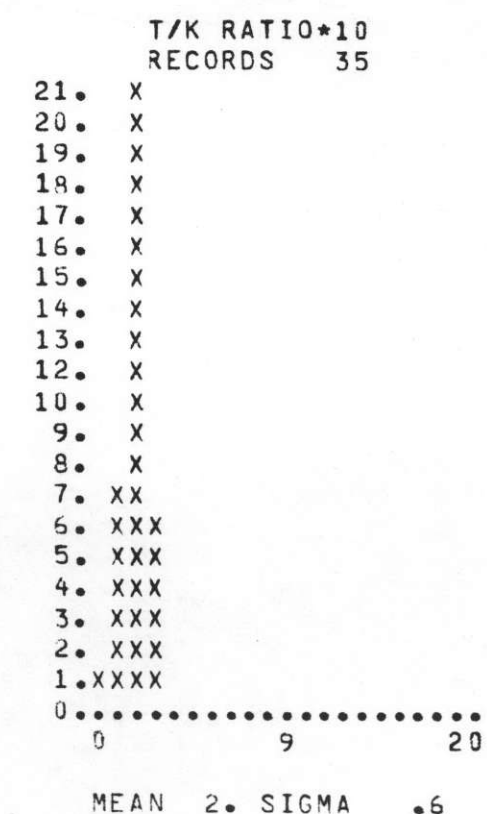
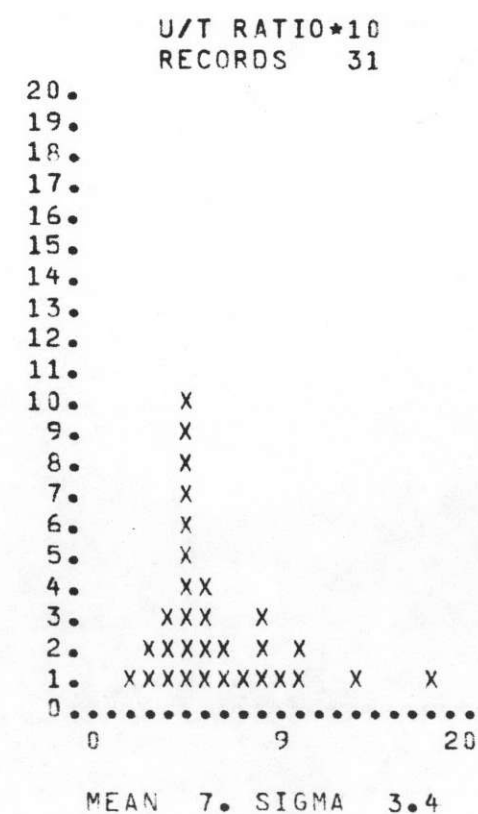
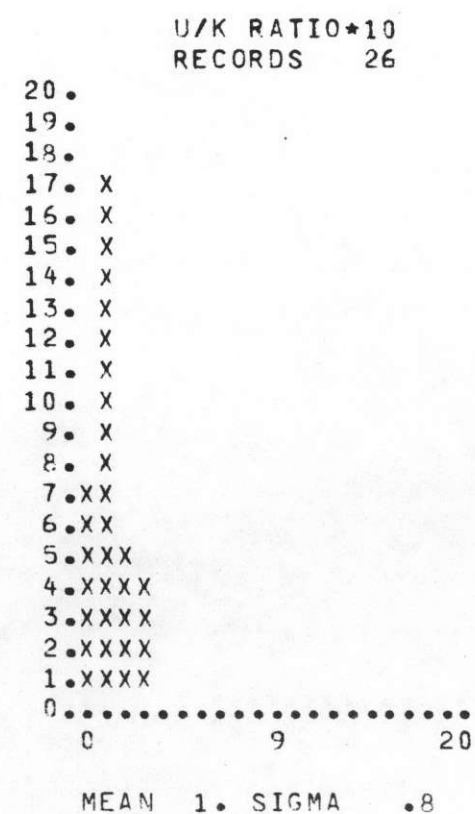
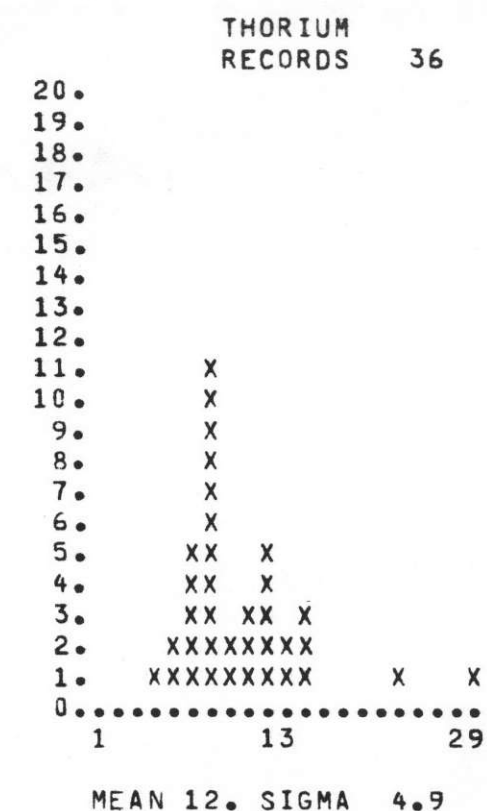
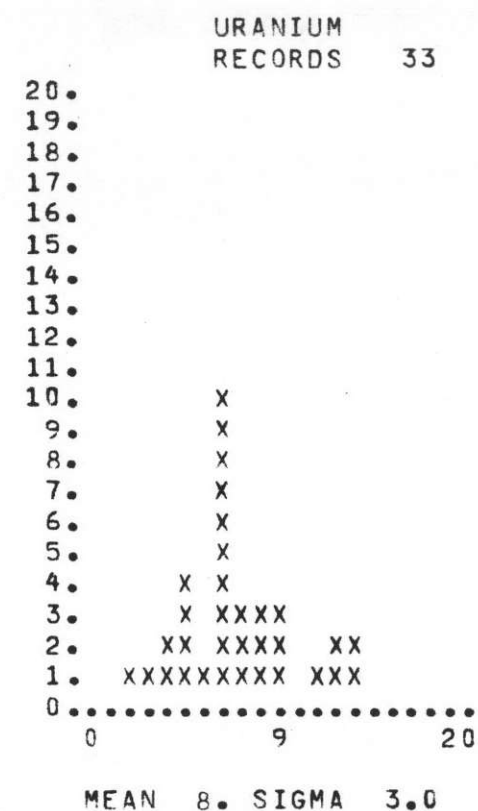
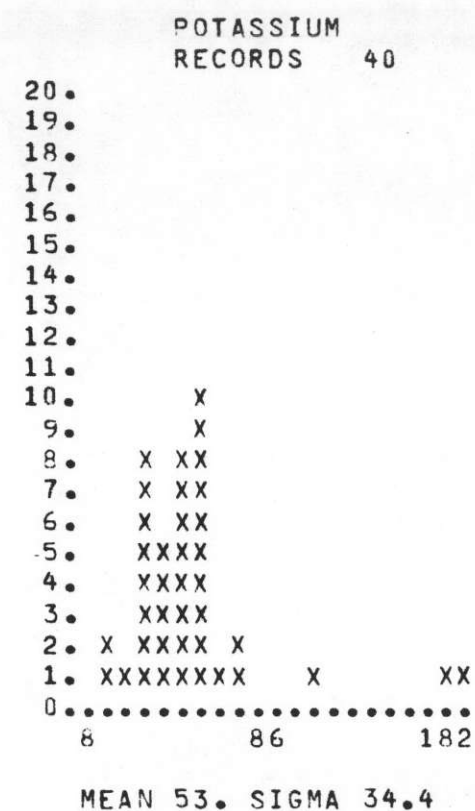


MEAN 4. SIGMA 1.8



MEAN 2. SIGMA 1.2

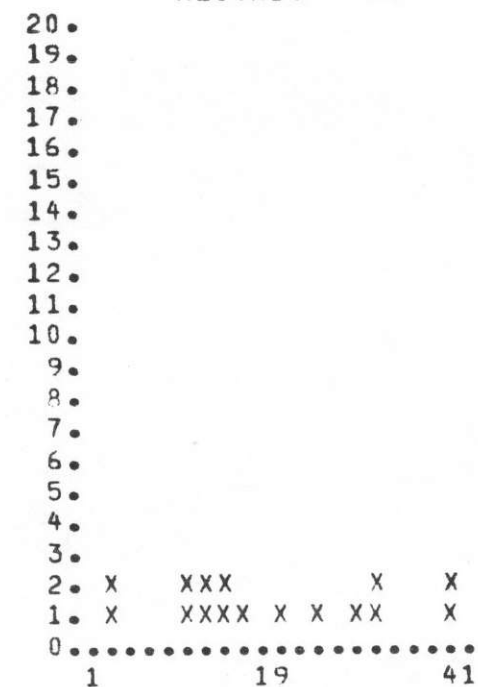
TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT TV





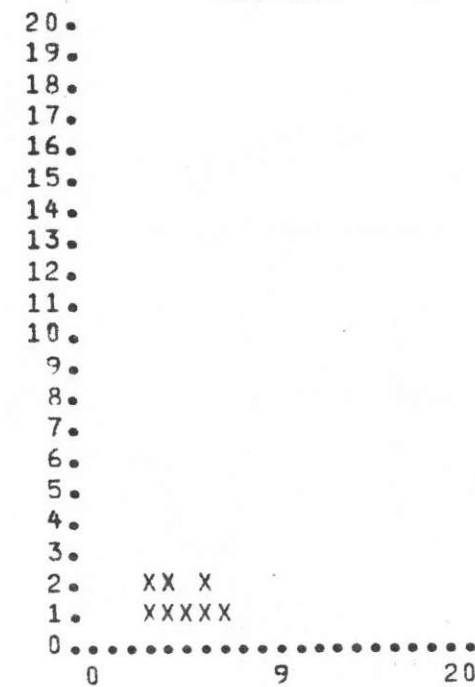
TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT TMZG

POTASSIUM  
RECORDS 17



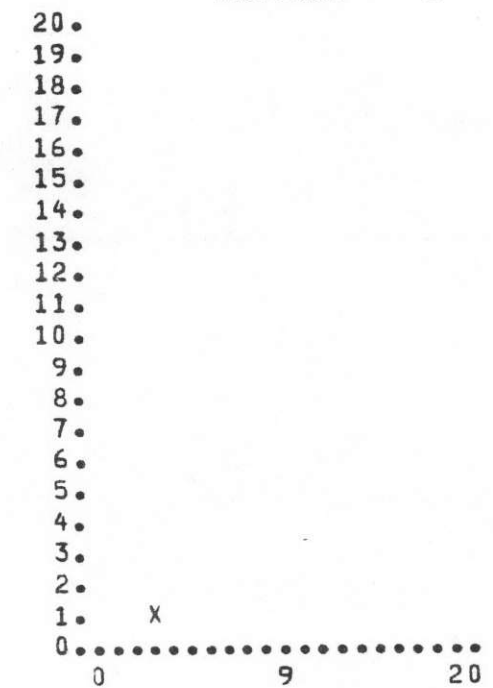
MEAN 22. SIGMA 12.4

URANIUM  
RECORDS 8



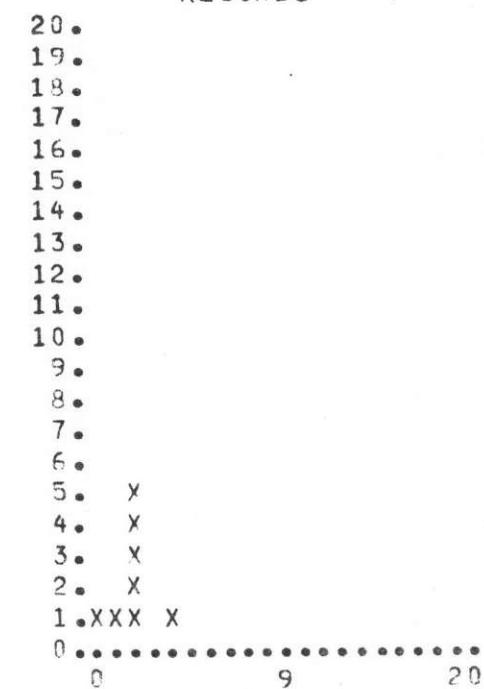
MEAN 5. SIGMA 1.5

THORIUM  
RECORDS 1



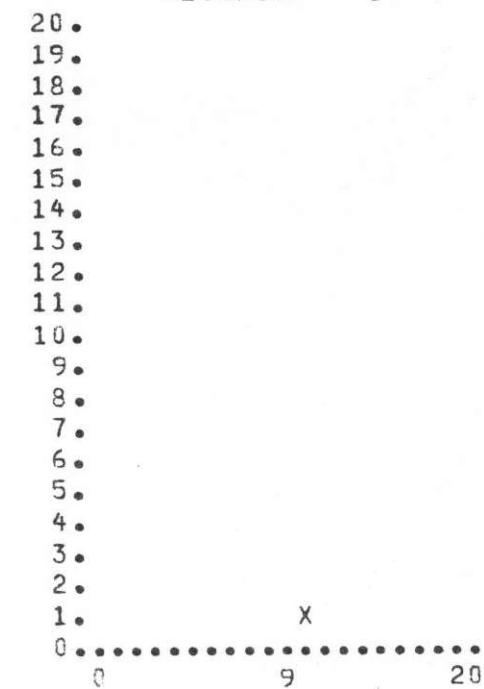
MEAN 3. SIGMA 1.0

U/K RATIO\*10  
RECORDS 7



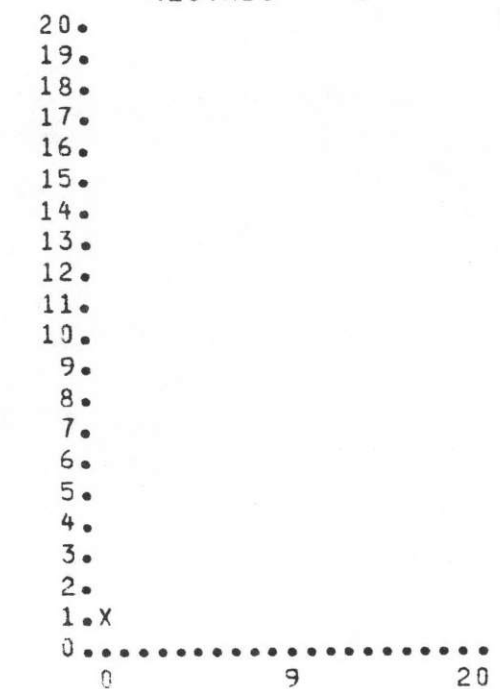
MEAN 2. SIGMA .9

U/T RATIO\*10  
RECORDS 1



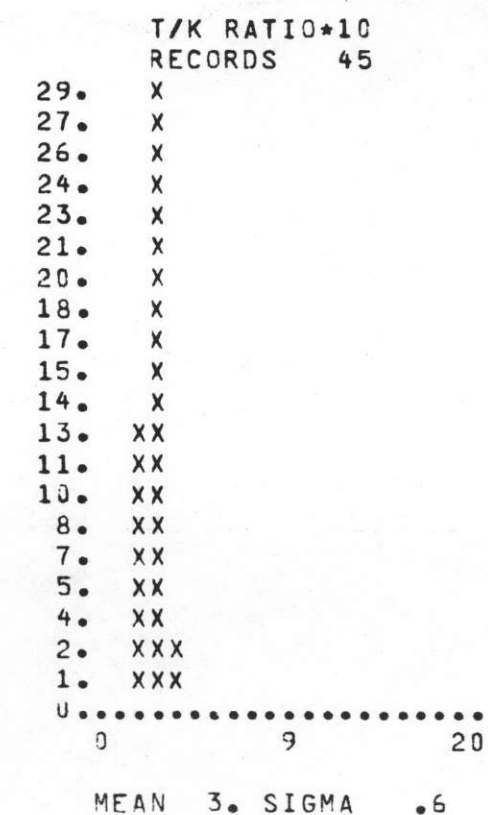
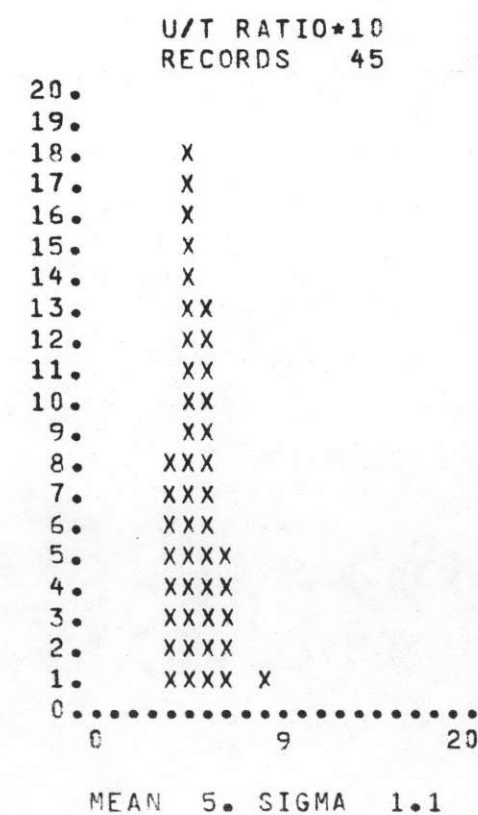
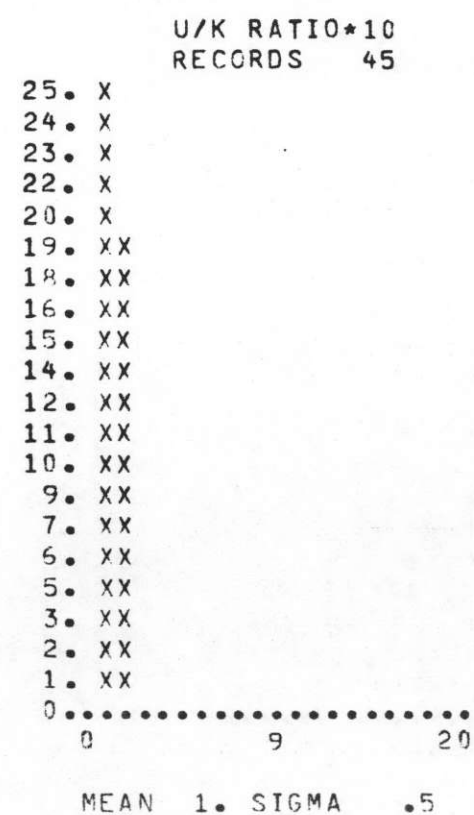
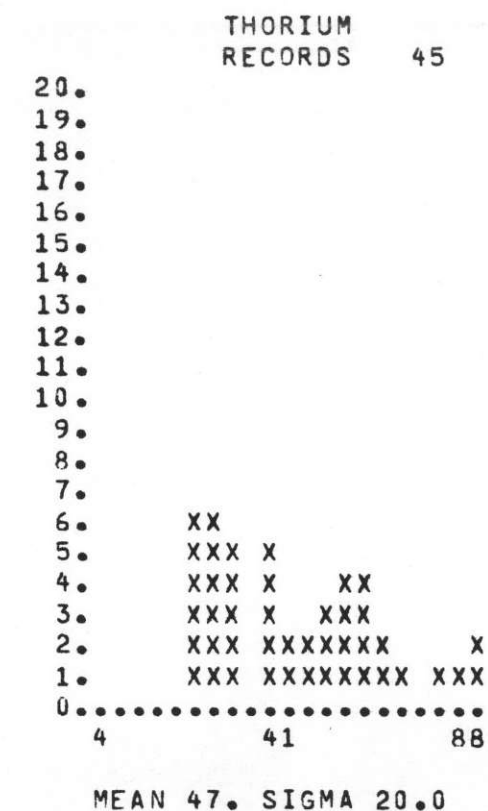
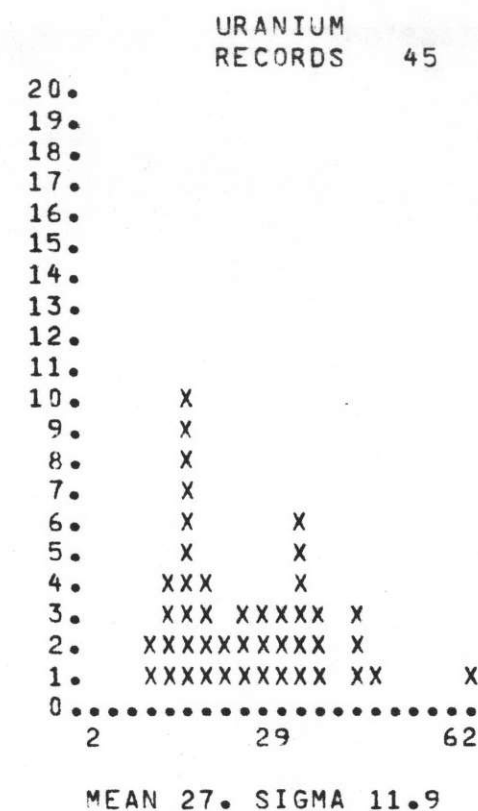
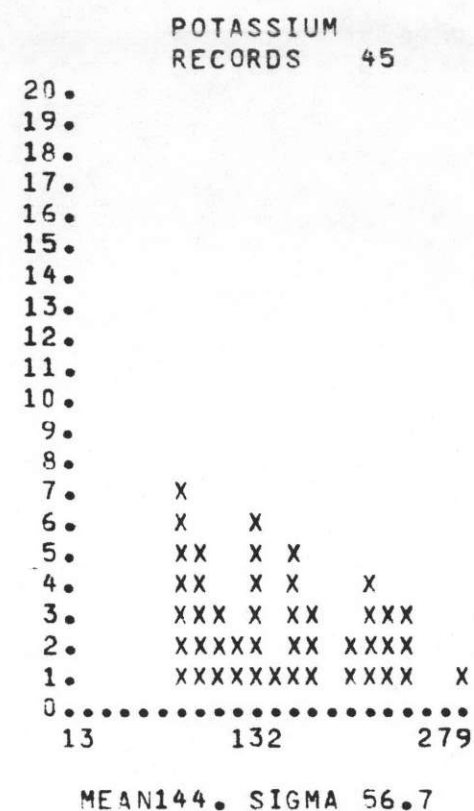
MEAN 11. SIGMA .0

T/K RATIO\*10  
RECORDS 0



MEAN 0. SIGMA .0

TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
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GEOLOGIC UNIT UMZ

POTASSIUM  
RECORDS 302

46. X  
43. X  
41. X  
39. X  
36. XXX X  
34. XXX X X  
32. XXX X X  
29. XXXXX X  
27. XXXXX X  
25. XXXXX X  
23. XXXXXXX  
20. XXXXXXX  
18. XXXXXXX  
16. XXXXXXX  
13. XXXXXXX  
11. XXXXXXX  
9. XXXXXXXX X  
6. XXXXXXXXXXXX  
4. XXXXXXXXXXXX  
2. XXXXXXXXXXXX  
0 .....  
13 135 285

MEAN 62. SIGMA 45.2

URANIUM  
RECORDS 214

40. X X  
38. X X  
36. X X  
34. X X  
32. X X  
30. X XX  
28. X XX  
26. X XX  
24. X XX  
22. XXXX  
20. XXXX  
18. XXXX  
16. X XXXX  
14. X XXXX  
12. XXXXXX  
10. XXXXXX X X  
8. XXXXXX X X  
6. XXXXXX X  
4. XXXXXX X X X X  
2. XXXXXX XX XXX X  
0 .....  
1 14 31

MEAN 10. SIGMA 6.1

THORIUM  
RECORDS 249

56. X  
53. X  
50. X  
47. X  
44. XX  
42. XX  
39. XX  
36. XXX  
33. XXXX  
30. XXXX  
28. XXXX  
25. XXXX  
22. XXXX  
19. XXXXX  
16. XXXXX  
14. XXXXX  
11. XXXXX X  
8. XXXXXX  
5. XXXXXXXX X  
2. XXXXXXXX XX XX X  
0 .....  
2 29 62

MEAN 16. SIGMA 11.4

U/K RATIO\*10  
RECORDS 164

138. X  
132. X  
125. X  
118. X  
111. X  
104. X  
97. X  
90. X  
83. X  
76. X  
69. X  
62. X  
55. X  
48. X  
41. XX  
34. XX  
27. XX  
20. XX  
13. XXX  
6. XXX  
0 .....  
0 9 20

MEAN 1. SIGMA 1.0

U/T RATIO\*10  
RECORDS 193

58. X  
55. X  
52. X  
49. X  
46. X  
43. X  
40. X  
37. X  
34. X X  
31. XXXX  
29. XXXX  
26. XXXX  
23. XXXX  
20. XXXX  
17. XXXX  
14. XXXX  
11. XXXX  
8. XXXX  
5. XXXXXX  
2. XXXXXXXX  
0 .....  
1 10 23

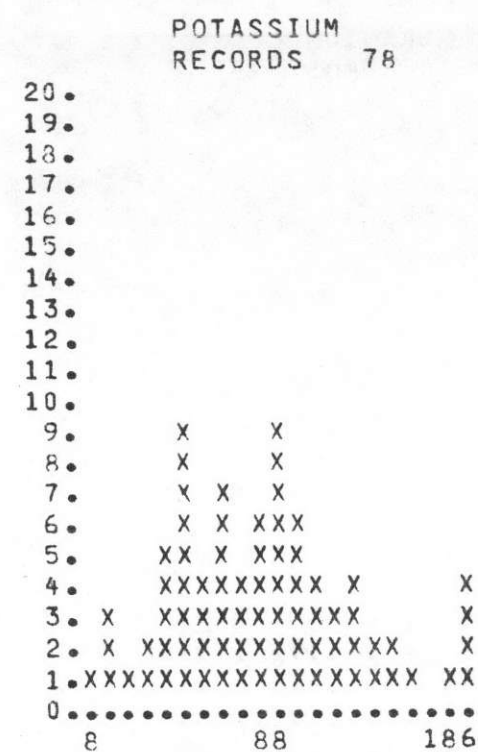
MEAN 6. SIGMA 2.4

T/K RATIO\*10  
RECORDS 242

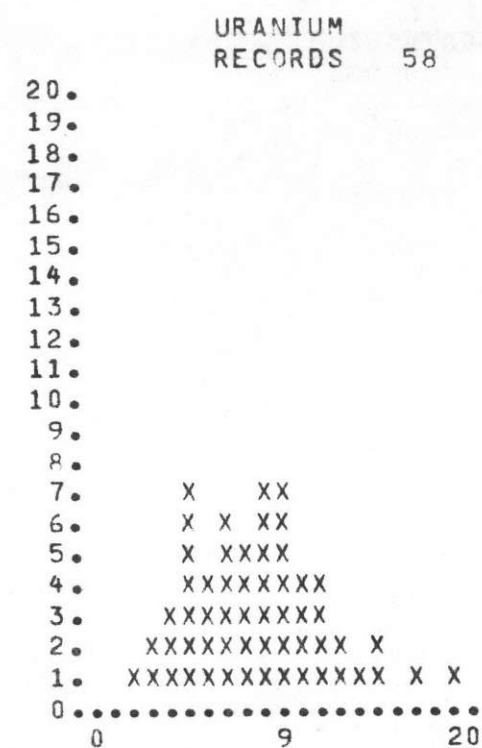
83. X  
79. X  
75. X  
71. XX  
67. XX  
62. XX  
58. XXX  
54. XXX  
50. XXX  
46. XXX  
41. XXX  
37. XXX  
33. XXX  
29. XXX  
25. XXX  
20. XXX  
16. XXXX  
12. XXXX  
8. XXXX  
4. XXXXX  
0 .....  
0 9 20

MEAN 2. SIGMA 1.1

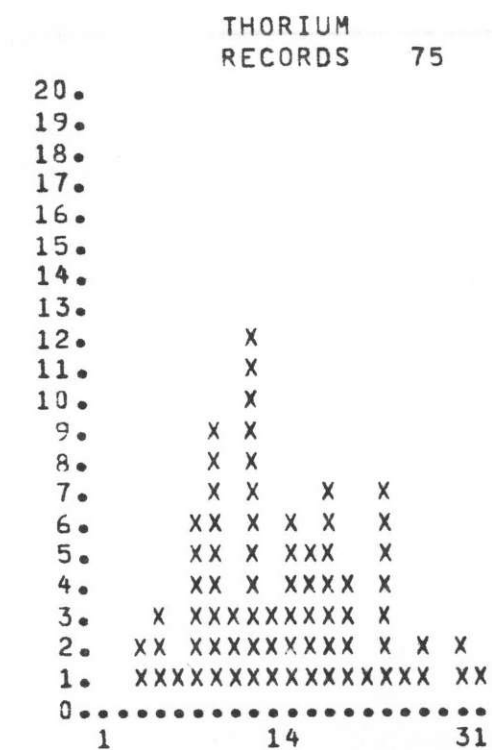
TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
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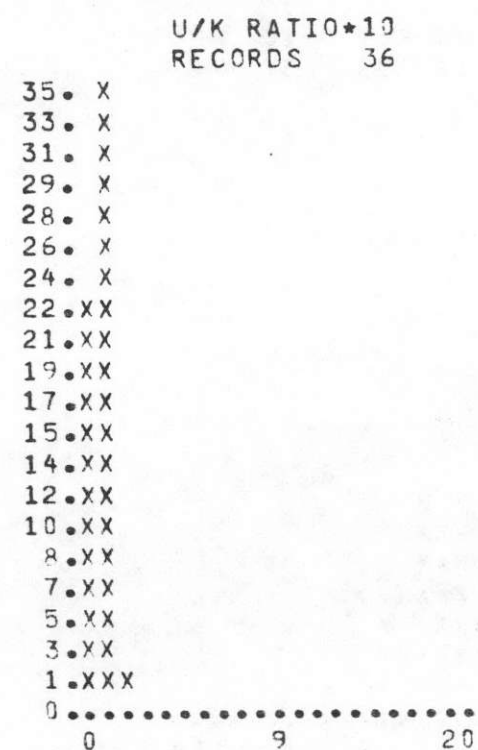
MEAN 86. SIGMA 42.5



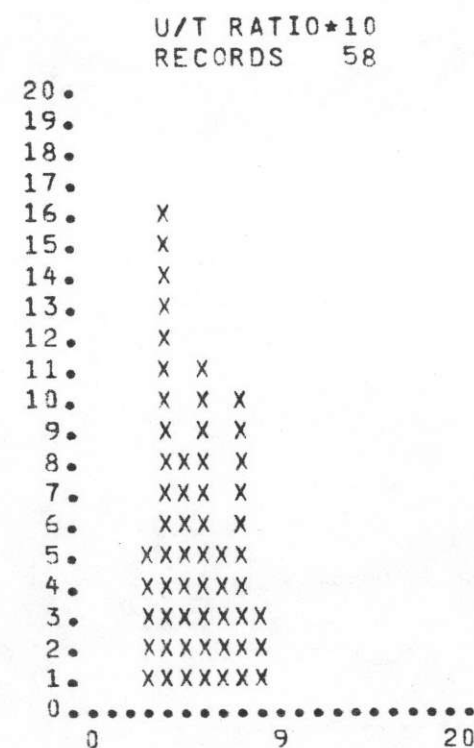
MEAN 10. SIGMA 3.9



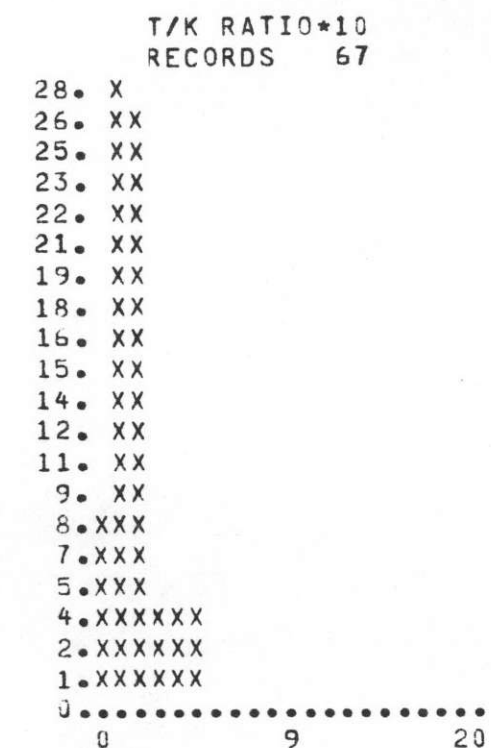
MEAN 16. SIGMA 6.7



MEAN 1. SIGMA .2



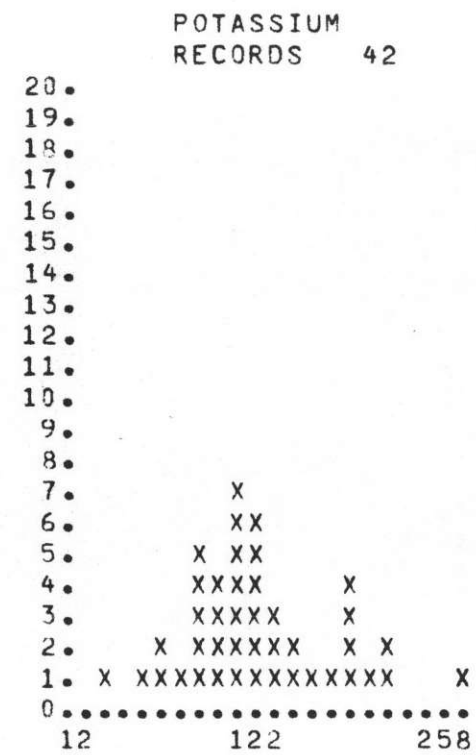
MEAN 6. SIGMA 1.8



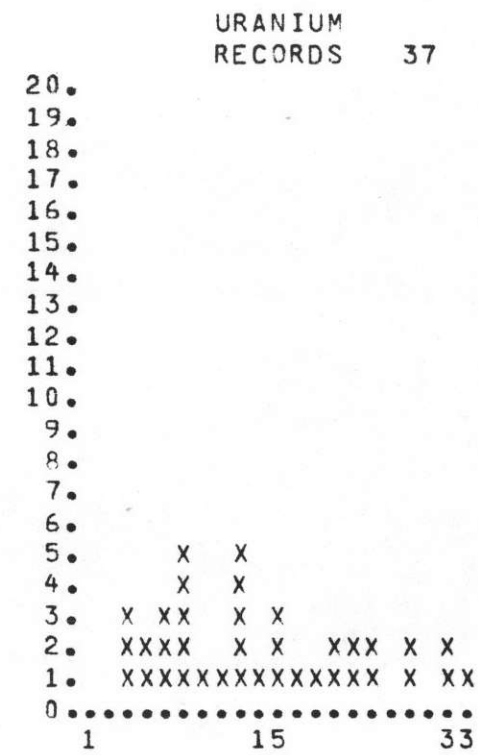
MEAN 2. SIGMA 1.1



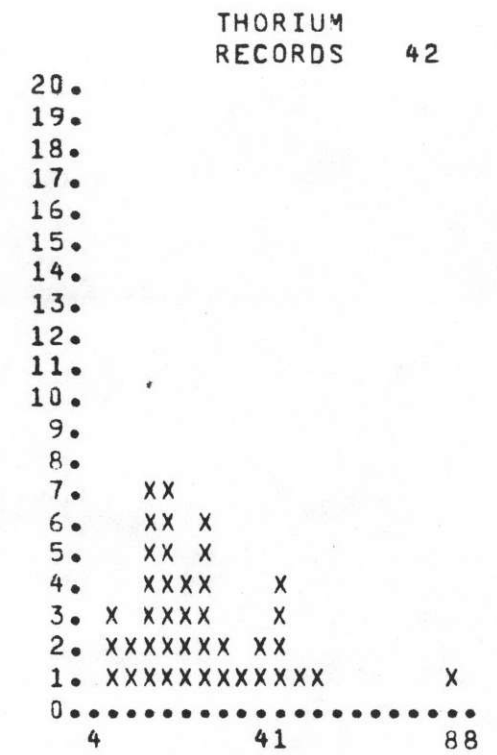
TYONEK ALASKA LKB RESOURCES, INC. 40-76-4104 1976-78  
GEOLOGIC UNIT LMZM



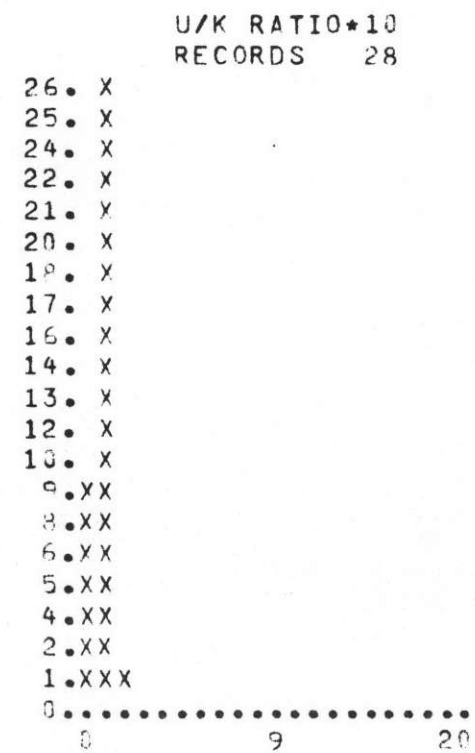
MEAN 120. SIGMA 48.7



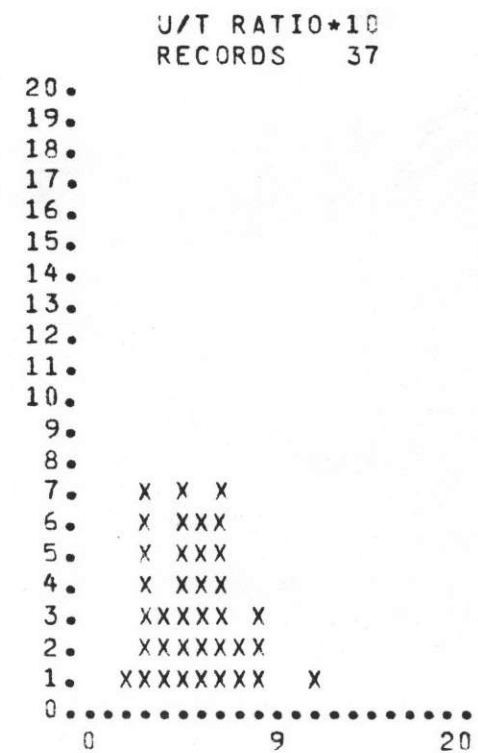
MEAN 16. SIGMA 8.9



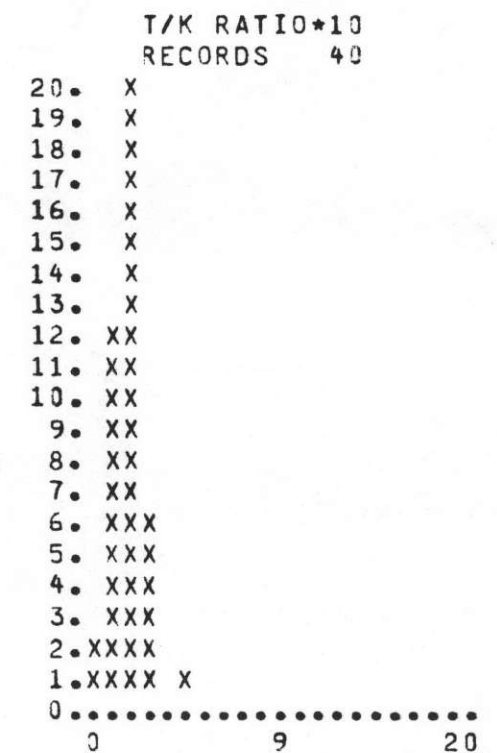
MEAN 28. SIGMA 17.9



MEAN 1. SIGMA .2



MEAN 6. SIGMA 2.2



MEAN 2. SIGMA .8





